

Section 240 - ELECTRICAL SYSTEM – OPERATION AND TESTS

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Group S01 - SE01 - Motor Starting and Charging System

SE01 - Motor Starting and Charging System (Summary of References)

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- [2] - [SE01A - Power Supply \(Cab Harness\), Diagnostic Schematic and Circuit Test](#)
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- [7] - [SE01E - Intake Air Heater 4-Cyl. Tractors, Diagnostic Schematic and Circuit Test](#)

(2) Check voltage at red wire terminal XM01 of starter motor M01

Action:

Location: [XM01 - Connector for Starter Motor M01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken wires between battery and starter motor.

(3) Check voltage at red wire terminal input of 2-pin connector XF00

Action:

Location: [XF00 - 2-Pin Connector for Main Fuse F00](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for corroded connections or broken red wire between starter motor M01 and 2-pin connector XF00.

(4) Check voltage at red wire terminal output of 2-pin connector XF00

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check " [F00 - Main Fuse for Main Wiring Harness](#) " and replace if necessary. If fuse is good, check for corroded or loose terminals.

(5) Check voltage at red wire terminal BAT of main switch S01

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6.](#)

NO: Check for corroded connections or broken wires between main fuse and main switch.

(6) Check voltage at BAT terminal of 6/1-pin connector XS01

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: Check " [S01 - Main Switch](#) " and replace if necessary.

(7) Check voltage at red wire terminal of 1-pin connector X06

Action:

Location: [X06 - 1-Pin Connector for Fuse Box \(+30\)](#)

Result must be same as battery voltage.

Result:

YES: Tractor is equipped with fuse and relay box II, [GO TO 8](#) .Tractor is not equipped with fuse and relay box II, [GO TO 9](#) .

NO: Check for corroded connections or broken wires between 1-pin connector X06 and main switch.

(8) Check voltage at red wire terminal of 1-pin connector XF26

Action:

Location: [XF26 - 1-Pin Connector for Main Fuse F26 of Fuse and Relay Box II \(+30\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 9](#)

NO: Check " [F26 - Main Fuse of Fuse and Relay Box II \(+30\)](#) " and replace if necessary.

(9) Check voltage at white wire terminal AID of 6/1-pin connector XS01

Action:

Main switch in ACC (P) position.

Result must be same as battery voltage.

Result:

YES: [GO TO 10](#)

NO: Check " [S01 - Main Switch](#) " and replace if necessary.

(10) Check voltage at brown wire terminal IGN of 6/1-pin connector XS01

Action:

Main switch in IGN (1) position.

Result must be same as battery voltage.

Main switch in ST (2) position.

⚠ CAUTION:

The engine will crank.

Result must be same as battery voltage.

Result:

YES: [GO TO 11](#)

NO: Check " [S01 - Main Switch](#) " and replace if necessary.

(11) Check voltage at brown wire terminal of 1-pin connector X05

Action:

Location: [X05 - 1-Pin Connector for Fuse Box \(+15\)](#)

Main switch in IGN (1) position.

Result must be same as battery voltage.

Result:

YES: Tractor is equipped with fuse and relay box II, [GO TO 12](#) . Tractor is not equipped with fuse and relay box II, [GO TO 13](#) .

NO: Check for corroded connections or broken wires between 1-pin connector X05 and main switch.

(12) Check voltage at brown wire terminal of 1-pin connector XF25

Action:

Location: [XF25 - 1-Pin Connector for Main Fuse F25 of Fuse and Relay Box II \(+15\)](#)

Main switch in IGN (1) position.

Result must be same as battery voltage.

Result:

YES: [GO TO 13](#)

NO: Check " [XF25 - 1-Pin Connector for Main Fuse F25 of Fuse and Relay Box II \(+15\)](#) " and replace if necessary.

(13) Check voltage at orange wire terminal ACC of 6/1-pin connector XS01

Action:

Main switch in ACC (P) position.

Result must be same as battery voltage.

Main switch in IGN (1) position.

Result must be same as battery voltage.

Result:

YES: [GO TO 14.](#)

NO: Check " [S01 - Main Switch](#) " and replace if necessary.

(14) Check voltage at blue/black wire terminal ST of 6/1-pin connector XS01

Action:

Main switch in ST (2) position.

⚠ CAUTION:

The engine will crank.

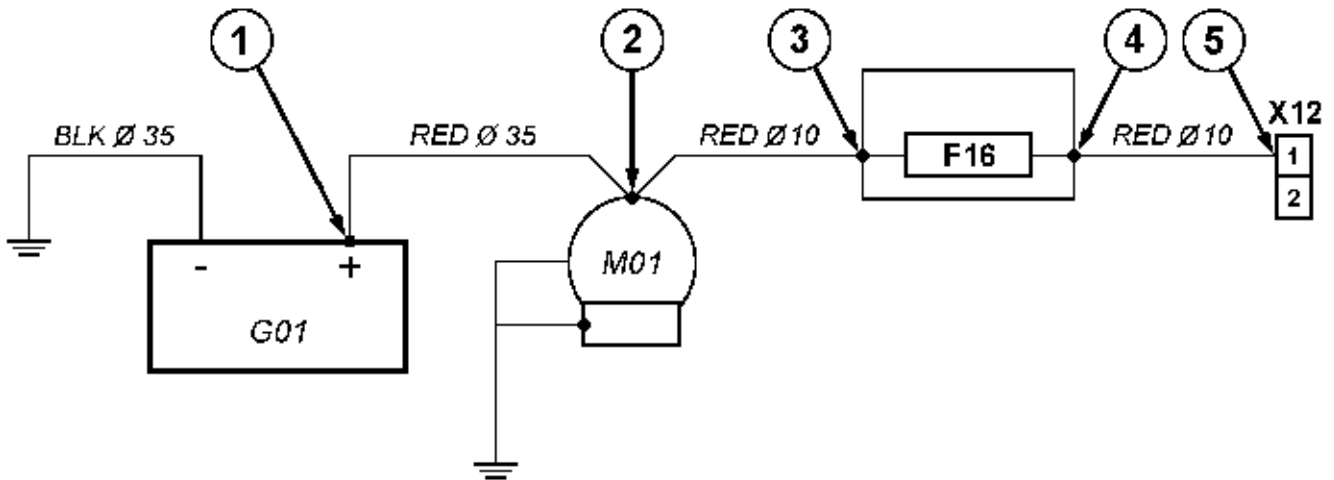
Result must be same as battery voltage.

Result:

YES:END OF TEST

NO:Check " [S01 - Main Switch](#) " and replace if necessary.

SE01A - Power Supply (Cab Harness), Diagnostic Schematic and Circuit Test



AT17364

Power supply test points (cab harness)

Meet following requirements:

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Power Supply Test (Cab Harness)

Power Supply Circuit (Cab Harness)

(1) Check voltage at red wire of battery post (+)

Action:

Location: [G01 - Battery](#)

Result must be minimum 11.8 volt direct-current.

Result:

YES: [GO TO 2](#)

NO: Check [G01 - Battery](#) in this Section.

(2) Check voltage at red wire terminal XM01 of starter motor M01

Action:

Location: [XM01 - Connector for Starter Motor M01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken wires between battery and starter motor.

(3) Check voltage at red wire terminal input of 2-pin connector XF16

Action:

Location: [XF16 - 2-Pin Connector for Main Fuse F16](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for corroded connections or broken red wire between starter motor M01 and 2-pin connector XF16.

(4) Check voltage at red wire terminal output of 2-pin connector XF16

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check " [F16 - Main Fuse for Cab Wiring Harness](#) " and replace if necessary. If fuse is good, check for corroded or loose terminals.

(5) Check voltage at red wire terminal 1 of 2-pin connector X12

Action:

Location: [X12 - 2-Pin Interconnection between Wiring Harnesses W04 and W05](#)

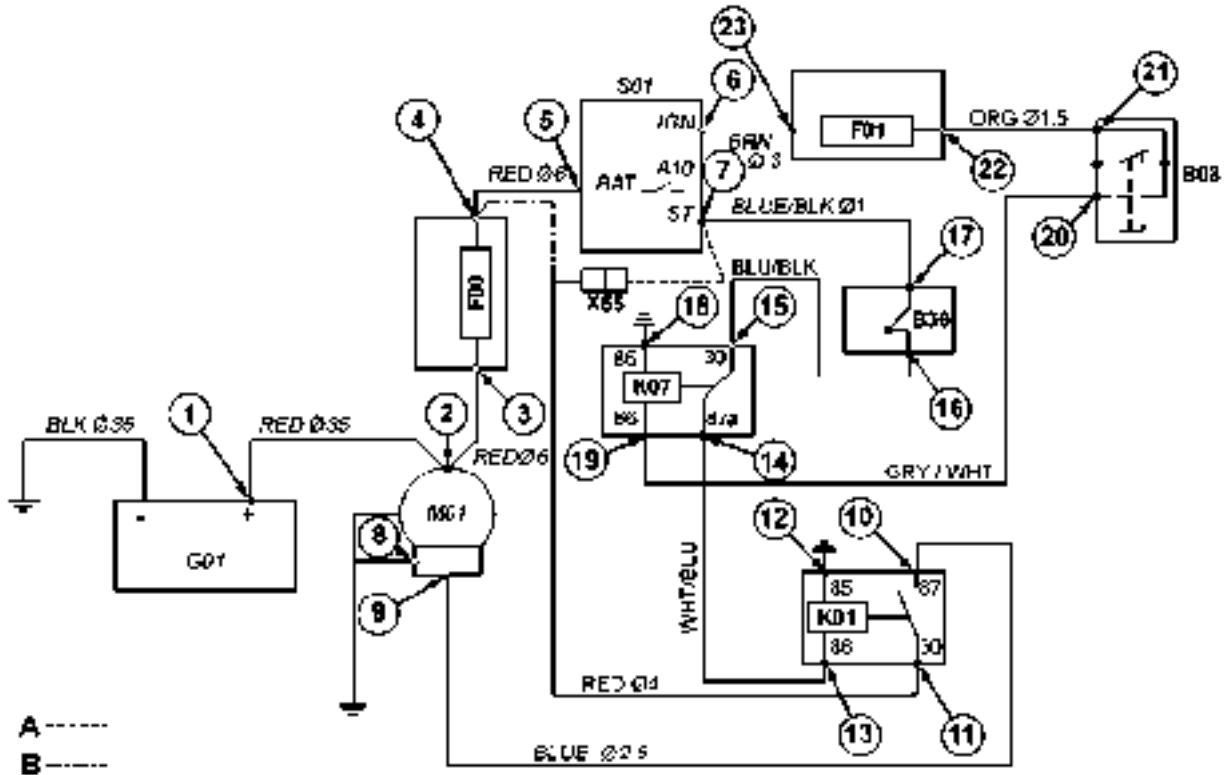
Result must be same as battery voltage.

Result:

YES:END OF TEST

NO:Check for corroded connections or broken wires between main fuse and 2-pin connector X12.

SE01B - Starting System without EHM, Diagnostic Schematic and Circuit Test



AT16730

Starting system test points

LEGEND:

- 1 - 23 Test points
- A With 1-pin interconnection X55 (new version)
- B Without 1-pin interconnection X55
- B08 PTO neutral start switch
- B36 Neutral start switch
- F00 50 amp main fuse
- F01 10 amp fuse
- G01 Battery
- M01 Starter motor
- K01 Starter relay
- K07 PTO neutral start relay
- S01 Main switch
- X55 1-pin interconnection between wiring harnesses W01 and W02

Meet following requirements:

- Main switch in IGN position

- Gear shift lever in neutral position
- PTO disengaged
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Starting System Test

(1) Check voltage at battery post (+)

Action:

Result must be minimum 11.8 volt direct-current.

Result:

YES: [GO TO 2](#)

NO: Test and charge " [G01 - Battery](#) " (replace if necessary).

(2) Check voltage at red wire terminal of starter motor M01

Action:

Location: [XM01 - Connector for Starter Motor M01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken red wires between battery G01 and starter motor M01.

(3) Check voltage at red wire terminal input of main fuse F00

Action:

Location: [XF00 - 2-Pin Connector for Main Fuse F00](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for corroded connections or broken red wire between starter motor M01 and main fuse F00.

(4) Check voltage at red wire terminal output of main fuse F00

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check fuse F00 and replace if necessary. If fuse is good, check for corroded or loose terminals.

(5) Check voltage at red wire terminal BAT of main switch S01

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded connections or broken red wire between main fuse and main switch.

(6) Check voltage at brown wire terminal IGN of main switch S01

Action:

Main switch in IGN position.

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: Check " [S01 - Main Switch](#) " and replace if necessary.

(7) Check voltage at blue/black wire terminal ST of main switch S01

Action:

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO: Check " [S01 - Main Switch](#) " and replace if necessary.

(8) Check ground connection at black terminal of starter motor M01

Action:

Location: [XM01 - Connector for Starter Motor M01](#)

Check ground connection.

Result:

YES: [GO TO 9](#)

NO: Check continuity to ground of black wire. If all connections are good, check " [M01 - Starter Motor](#) " and replace if necessary.

(9) Check voltage at blue wire terminal XM01ST of starter motor M01

Action:

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: If all connections are good, check " [M01 - Starter Motor](#) " and replace if necessary.

NO: [GO TO 10](#)

(10) Check voltage at blue wire terminal 87 of relay K01

Action:

Location: [XK01 - 4-Pin Connector for Starter Relay K01](#)

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or broken blue wire between relay K01 and starter motor M01.

NO: [GO TO 11](#)

(11) Check voltage at red wire terminal 30 of relay K01

Action:

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: [GO TO 12](#)

NO: Check for corroded connections or broken red wire between relay K01 and main fuse F00 or main switch S01 terminal ST ([X55 - 1-Pin Interconnection between Wiring Harnesses W01 and W02](#)).

(12) Check ground connection at black wire terminal 85 of relay K01

Action:

Check ground connection.

Result:

YES: [GO TO 13](#)

NO: Check ground connection on terminal 85 black wire.

(13) Check voltage at white/blue wire terminal 86 of relay K01

Action:

Gear shift lever in neutral position

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: Check " [K01 - Starter Relay](#) " and replace if necessary. If relay is good, check for corroded or loose terminals.

NO: [GO TO 14](#)

(14) Check voltage at white/blue terminal 87A of relay K07

Action:

Location: [XK07 - 5-Pin Connector for PTO Neutral Start Relay](#)

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or broken wire between relay K01 and relay K07.

NO: [GO TO 15](#)

(15) Check voltage at blue/black wire terminal 30 of relay K07

Action:

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: [GO TO 18](#)

NO: [GO TO 16](#)

(16) Check voltage at blue/black wire terminal of 2/1-pin connector XB36

Action:

Location: [XB36 - 2/1-Pin Connectors for Neutral Start Switch B36](#)

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or broken blue/black wire between relay K07 and 2/1-pin connector XB36.

NO: [GO TO 17](#)

(17) Check voltage at blue/black wire terminal of 2/1-pin connector XB36

Action:

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: Check " [B36 - Neutral Start Switch](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

NO: Check for corroded connections or broken blue/black wire between main switch S01 terminal ST and 2/1-pin connector XB36.

(18) Check ground connection at black wire terminal 85 of relay K07

Action:

Location: [XK07 - 5-Pin Connector for PTO Neutral Start Relay](#)

Check ground connection.

Result:

YES: [GO TO 19](#)

NO: Check ground connection on terminal 85 black wire.

(19) Check voltage at grey/white wire terminal 86 of relay K07

Action:

PTO disengaged.

Result must be less than 0.2 volt.

PTO engaged.

Result must be same as battery voltage.

Result:

YES: Check " [K07 - PTO Neutral Start Relay](#) " and replace if necessary. If relay is good, check for corroded or loose terminals.

NO: [GO TO 20](#)

(20) Check voltage at grey/white wire terminal of 2/1-pin connector XB08

Action:

Location: [XB08 - 2/1-Pin Connectors for PTO Neutral Start Switch B08](#)

PTO disengaged.

Result must be less than 0.2 volt.

PTO engaged.

Result must be same as battery voltage.

Result:

YES:Check for corroded connections or broken grey/white wire between 2/1-pin connector XB08 and relay K07.

NO: [GO TO 21](#)

(21) Check voltage at orange wire terminal of 2/1-pin connector XB08

Action:

Result must be same as battery voltage.

Result:

YES:Check " [B08 - PTO Neutral Start Switch](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

NO: [GO TO 22](#)

(22) Check voltage at orange wire terminal output of fuse F01

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES:Check for corroded connections or broken orange wire between 2/1-pin connector XB08 and fuse F01.

NO: [GO TO 23](#)

(23) Check voltage at brown wire terminal input of fuse F01

Action:

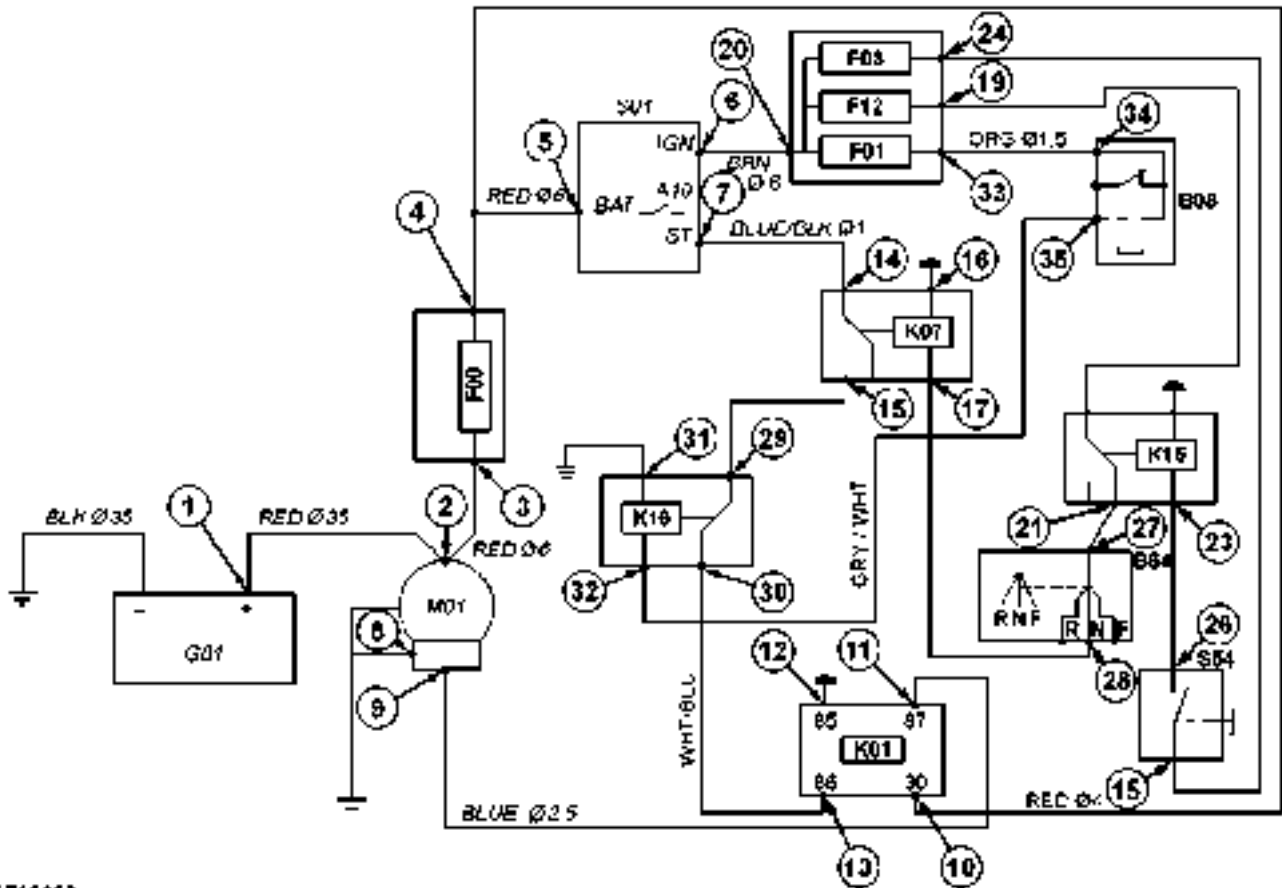
Result must be same as battery voltage.

Result:

YES:Check fuse F01 and replace if necessary. If fuse is good, check for corroded or loose terminals.END OF TEST

NO:Check for corroded connections or broken brown wire between main switch S01 and fuse F01.

SE01C - Starting System with EHM or EHM II, Diagnostic Schematic and Circuit Test



AT18900

Starting system test points with EHM or EHM II

LEGEND:

- 1 - 35 Test points
- B08 PTO neutral start switch
- B64 Reverse drive lever switch (EHM or EHM II)
- F00 50 amp main fuse
- F01 10 amp fuse
- F08 7.5 amp fuse
- F12 15 amp fuse
- G01 Battery
- M01 Starter motor
- K01 Starter relay
- K07 PTO neutral start relay
- K15 Declutch relay (EHM or EHM II)
- K16 Neutral start relay (EHM or EHM II)
- S01 Main switch
- S54 Declutch switch on range shift lever (EHM or EHM II)

Meet following requirements:

- Main switch in IGN position
- Gear shift lever in neutral position
- Reverse drive lever in neutral position
- Declutch switch on range shift lever not actuated
- PTO disengaged
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Starting System Test

(1) Check voltage at battery post (+)

Action:

Result must be minimum 11.8 volt direct-current.

Result:

YES: [GO TO 2](#)

NO: Test and charge " [G01 - Battery](#) " (replace if necessary).

(2) Check voltage at red wire terminal of starter motor M01

Action:

Location: [XM01 - Connector for Starter Motor M01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken red wire between battery G01 and starter motor M01.

(3) Check voltage at red wire terminal input of main fuse F00

Action:

Location: [XF00 - 2-Pin Connector for Main Fuse F00](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for corroded connections or broken red wire between starter motor M01 and main fuse.

(4) Check voltage at red wire terminal output of main fuse F00

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check fuse F00 and replace if necessary. If fuse is good, check for corroded or loose terminals.

(5) Check voltage at red wire terminal BAT of main switch S01

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded connections or broken wire between main fuse and main switch.

(6) Check voltage at brown wire terminal IGN of main switch S01

Action:

Main switch in IGN position

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: Check " [S01 - Main Switch](#) " and replace if necessary.

(7) Check voltage at blue/black wire terminal ST of main switch S01

Action:

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO: Check " [S01 - Main Switch](#) " and replace if necessary.

(8) Check ground connection at black terminal of starter motor M01

Action:

Location: [XM01 - Connector for Starter Motor M01](#)

Check ground connection.

Result:

YES: [GO TO 9](#)

NO: Check continuity to ground of black wire. If all connections are good, check " [M01 - Starter Motor](#) " and replace if necessary.

(9) Check voltage at blue wire terminal XM01ST of starter motor M01

Action:

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: If all connections are good, check " [M01 - Starter Motor](#) " and replace if necessary.

NO: [GO TO 10](#)

(10) Check voltage at blue wire terminal 87 of relay K01

Action:

Location: [XK01 - 4-Pin Connector for Starter Relay K01](#)

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or broken blue wire between relay K01 and starter motor M01.

NO: [GO TO 11](#)

(11) Check voltage at red wire terminal 30 of relay K01

Action:

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: [GO TO 12](#)

NO: Check for corroded connections or broken red wire between relay K01 and main fuse F00 or main switch S01 terminal ST ([X55 - 1-Pin Interconnection between Wiring Harnesses W01 and W02](#)).

(12) Check ground connection at black wire terminal 85 of relay K01

Action:

Check ground connection.

Result:

YES: [GO TO 13](#)

NO: Check ground connection on terminal 85 black wire.

(13) Check voltage at white/blue wire terminal 86 of relay K01

Action:

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: Check " [K01 - Starter Relay](#) " and replace if necessary. If relay is good, check for corroded or loose terminals.

NO: [GO TO 14](#)

(14) Check voltage at white/blue wire terminal 30 of relay K16

Action:

Location: [XK16 - 5-Pin Connector for Neutral Start Relay K16 \(EHM or EHM II\)](#)

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or broken wire between relay K16 and relay K01.

NO: [GO TO 15](#)

(15) Check voltage at white/blue wire terminal 87 of relay K16

Action:

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: [GO TO 18](#)

NO: [GO TO 16](#)

(16) Check voltage at white/blue terminal 87 of relay K07

Action:

Location: [XK07 - 5-Pin Connector for PTO Neutral Start Relay](#)

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or broken wire between relay K16 and relay K07.

NO: [GO TO 17](#)

(17) Check voltage at blue/black wire terminal 30 of relay K07

Action:

Hold main switch in START position.

Result must be same as battery voltage.

Result:

YES: [GO TO 31](#)

NO: Check for corroded connections or broken wire between main switch S01 and relay K07.

(18) Check ground connection at black wire terminal 85 of relay K16

Action:

Location: [XK16 - 5-Pin Connector for Neutral Start Relay K16 \(EHM or EHM II\)](#)

Check ground connection.

Result:

YES: [GO TO 19](#)

NO: Check ground connection on terminal 85 black wire.

(19) Check voltage at blue wire terminal 86 of relay K16

Action:

Reverse drive lever in neutral position.

Result must be same as battery voltage.

Result:

YES: Check " [K16 - Neutral Start Relay \(EHM or EHM II\)](#) " and replace if necessary. If relay is good, check for corroded or loose terminals.

NO: [GO TO 20](#)

(20) Check voltage at blue wire terminal 3 of 4-pin connector XB64

Action:

Location:XB64 - 4-Pin Connector for Reverser Drive Lever Switch B64 (EHM or EHM II):

Reverse drive lever in forward or reverse position.

Result must be less than 0.2 volt.

Reverse drive lever in neutral position.

Result must be same as battery voltage.

Result:

YES:Check for corroded connections or broken blue wire between 4-pin connector XB64 and relay K07.

NO: [GO TO 21](#)

(21) Check voltage at brown/blue wire terminal 1 of 4-pin connector XB64

Action:

Result must be same as battery voltage.

Result:

YES:Check " [B64 - Reverse Drive Lever Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

NO: [GO TO 22](#)

(22) Check voltage at brown/blue wire terminal 87A of relay K15

Action:

Location: [XK15 - 5-Pin Connector for Declutch Relay K15 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or broken brown/blue wire between relay K15 and 4-pin connector XB64.

NO: [GO TO 23](#)

(23) Check voltage at white/red wire terminal 30 of relay K15

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 26](#)

NO: [GO TO 24](#)

(24) Check voltage at fuse F12 output of fuse box

Action:

Location: XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or broken white/red wire between fuse F12 (output) and relay K15.

NO: [GO TO 25](#)

(25) Check voltage at input of fuses F01, F08 and F12 of fuse box

Action:

Result must be same as battery voltage.

Result:

YES:Check fuse F12 and replace if necessary. If fuse is good, check for corroded or loose terminals.Recondition as required and do an operational check of the system.

NO:Check for corroded connections or broken brown wire between brown wire terminal IGN of main switch S01 and fuse box.Perform " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) ".

(26) Check ground connection at black wire terminal 85 of relay K15

Action:

Location: [XK15 - 5-Pin Connector for Declutch Relay K15 \(EHM or EHM II\)](#)

Check ground connection.

Result:

YES: [GO TO 27](#)

NO:Check ground connection at black wire terminal 85 of relay K15.

(27) Check voltage at light blue/white terminal 86 of relay K15

Action:

Declutch switch on range shift lever not actuated.

Result must be less than 0.2 volt.

Declutch switch on range shift lever actuated.

Result must be same as battery voltage.

Result:

YES:Check " [K15 - Declutch Relay \(EHM or EHM II\)](#) " and replace if necessary. If relay is good, check for corroded or loose terminals.

NO: [GO TO 28](#)

(28) Check voltage at light blue/white wire terminal of 1-pin connector XS54

Action:

Location: [XS54 - 1-Pin Connector for Declutch Switch S54 on Range Shift Lever \(EHM or EHM II\)](#)

Declutch switch on range shift lever not actuated.

Result must be less than 0.2 volt.

Declutch switch on range shift lever actuated.

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or broken light blue/white wire between relay K15 and 1-pin connector XS54.

NO: [GO TO 29](#)

(29) Check voltage at brown/white wire terminal 2 of 3-pin connector X23

Action:

Location: [X23 - 3-Pin Connector for Hi-Lo Switches \(S53 and S52\)](#)

Result must be same as battery voltage.

Result:

YES: Check " [S54 - Declutch Switch on Range Shift Lever \(EHM or EHM II\)](#) " and replace if necessary.

NO: [GO TO 30](#)

(30) Check voltage at brown/white terminal output of fuse F08

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES:Check for corroded connections or broken brown/white wire between fuse F08 and 3-pin connector X23.

NO:Check fuse F08 and replace if necessary. If fuse is good, check for corroded or loose terminals. [GO TO 31](#)

(31) Check ground connection at black wire terminal 85 of relay K07

Action:

Location: [XK07 - 5-Pin Connector for PTO Neutral Start Relay](#)

Check ground connection.

Result:

YES: [GO TO 32](#)

NO:Check ground connection on terminal 85 black wire.

(32) Check voltage at grey/white wire terminal 86 of relay K07

Action:

PTO disengaged.

Result must be less than 0.2 volt.

PTO engaged.

Result must be same as battery voltage.

Result:

YES: Check " [K07 - PTO Neutral Start Relay](#) " and replace if necessary. If relay is good, check for corroded or loose terminals.

NO: [GO TO 33](#)

(33) Check voltage at grey/white wire terminal of 2/1-pin connector XB08

Action:

Location: [XB08 - 2/1-Pin Connectors for PTO Neutral Start Switch B08](#)

PTO disengaged.

Result must be less than 0.2 volt.

PTO engaged.

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or broken grey/white wire between 2/1-pin connector XB08 and relay K07.

NO: [GO TO 34](#)

(34) Check voltage at orange wire terminal of 2/1-pin connector XB08

Action:

Result must be same as battery voltage.

Result:

YES:Check " [B08 - PTO Neutral Start Switch](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

NO: [GO TO 35](#)

(35) Check voltage at orange wire terminal output of fuse F01

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

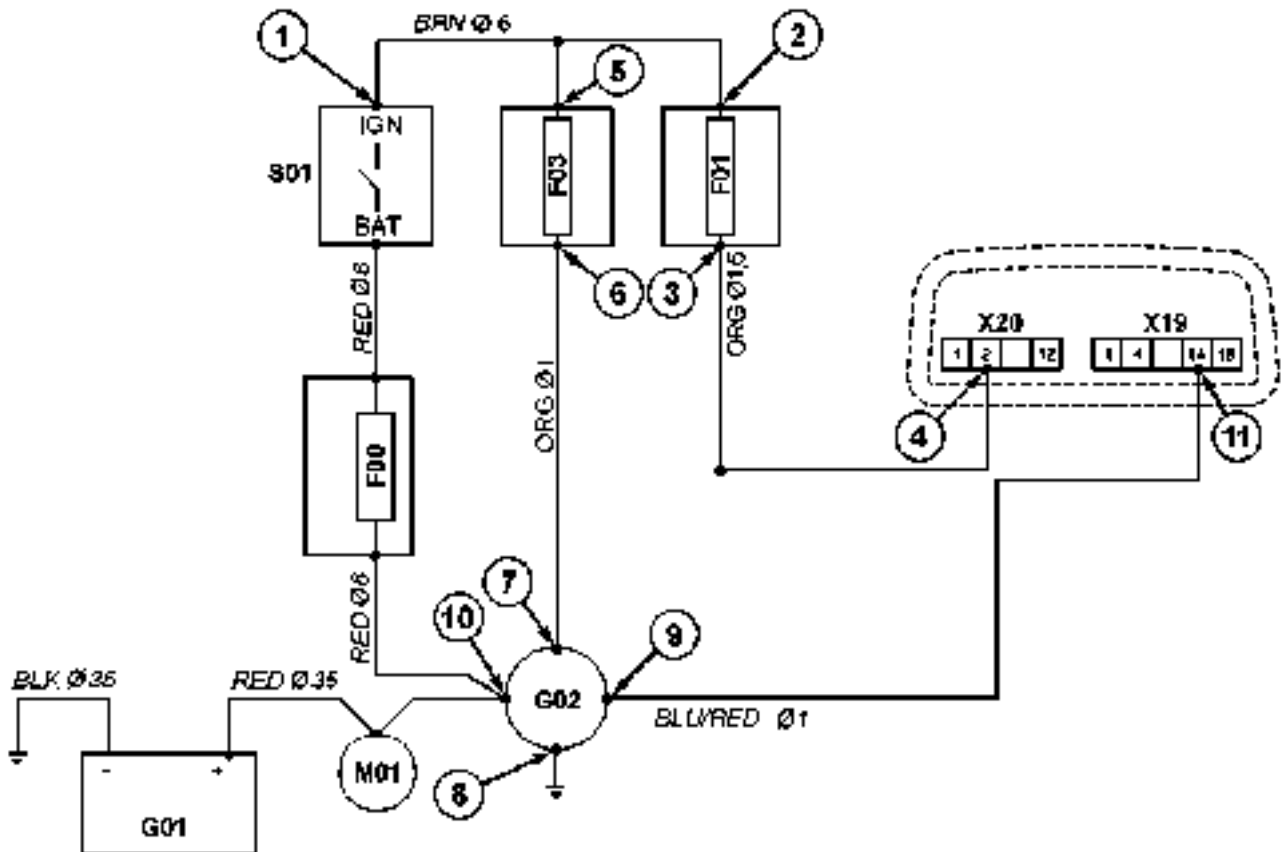
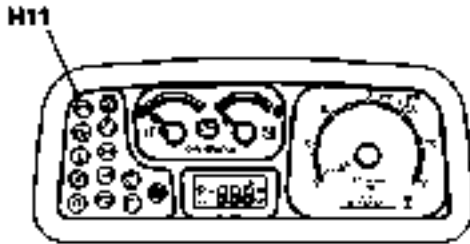
Result must be same as battery voltage.

Result:

YES:END OF TEST

NO:Check fuse F01 and replace if necessary. If fuse is good, check for corroded or loose terminals.

SE01D - Charging System, Diagnostic Schematic and Circuit Test



AT16915

Charging system test points

Meet following requirements:

- Main switch in "RUN" position.
- Gear shift lever in neutral position.
- PTO disengaged.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points.
- Meter on DC volt.

Charging System Test

(1) Check voltage at "IGN" terminal of main switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at fuse F01 input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or break in brown wire between main switch and fuse box.

(3) Check voltage at fuse F01 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check fuse F01 and replace if necessary. See in this section [F01 to F15 - Fuse Box](#) . If fuse is good, check for corroded or loose terminals.

(4) Check voltage at orange wire terminal 2 of 12-pin connector for instrument panel X20

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check for corroded connections or break in orange wire between fuse F01 and instrument panel connector.

(5) Check voltage at fuse F03 input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded connections or break in orange wire between main switch and fuse box.

(6) Check voltage at fuse F03 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: Check fuse F03 and replace if necessary. If fuse is good, check for corroded or loose terminal.

(7) Check voltage at orange wire terminal of alternator G02

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO: Check for corroded connections or break in orange wire between fuse F03 and alternator G02.

(8) Check ground connection at alternator case

Action:

Check ground connection.

Result:

YES: [GO TO 9](#)

NO: Check alternator mounts for good ground contact to engine.

(9) Check ground connection at blue/red wire terminal of alternator G02

Action:

Check ground connection.

Result:

YES: [GO TO 10](#)

NO: Check alternator G02 and replace if it is necessary.

(10) Check ground connection at blue/red wire terminal 14 of 18-pin connector for instrument panel X19

Action:

Check ground connection.

Result:

YES:The alternator indicator (H11) glows up. If the indicator does not glow up, check indicator and instrument panel. Repair or replace if it is necessary. [GO TO 11](#)

NO:Check for corroded connections or break in blue/red wire between alternator G02 and 18-pin connector for instrument panel X19.

(11) Check voltage at output red wire terminal of alternator G02

Action:

(Start engine and operate at fast idle)

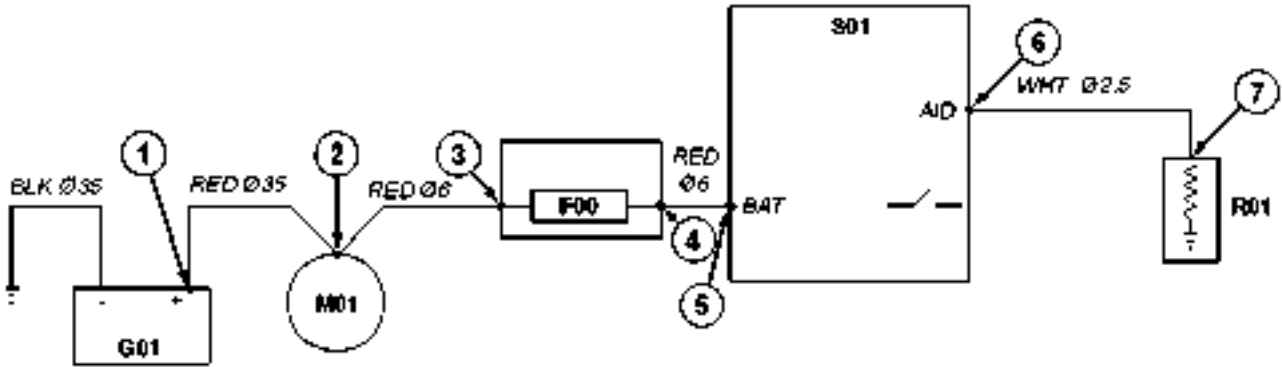
Result must be ca. 13.8 volts.

Result:

YES:END OF TEST

NO:Check belt tension and test [G02 - Alternator](#).

SE01E - Intake Air Heater 3-Cyl. Tractors, Diagnostic Schematic and Circuit Test



AT3160

Intake air heater 3-cyl. tractors, test points

LEGEND:

- 1 - 7 Test points
- F00 Main fuse
- G01 Alternator
- M01 Starter motor
- R01 Intake air heater (3-cyl.)
- S01 Main switch

Meet following requirements:

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Intake air Heater Test

(1) Check voltage at battery posts

Action:

Result must be minimum 11.8 volt direct-current.

Result:

YES: [GO TO 2.](#)

NO: Test and charge battery (replace if necessary)

(2) Check voltage at starter terminals

Action:

Location: [XM01 - Connector for Starter Motor M01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken wires between battery and starter motor.

(3) Check voltage at F00 main fuse input

Action:

Location: [XF00 - 2-Pin Connector for Main Fuse F00](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for corroded connections or broken red wire between starter motor and fuse box on alternator G02.

(4) Check voltage at F00 main fuse output, located on alternator G02

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check fuse F00 and replace if necessary. If fuse is good, check for corroded or loose terminals.

(5) Check voltage at BAT terminal of main switch S01

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 6.](#)

NO: Check for corroded connections or broken red wire between main fuse and main switch S01.

(6) Check voltage at AID terminal of main switch S01

Action:

Main switch in ACC position.

Result must be same as battery voltage.

Result:

YES: [GO TO 7.](#)

NO: Check " [S01 - Main Switch](#) " and replace if necessary.

(7) Check voltage at white wire terminal of intake air heater R01

Action:

Main switch in ACC position.

Location: [XR01 - 1-Pin Connector for Intake Air Heater R01 \(3-Cyl.\)](#)

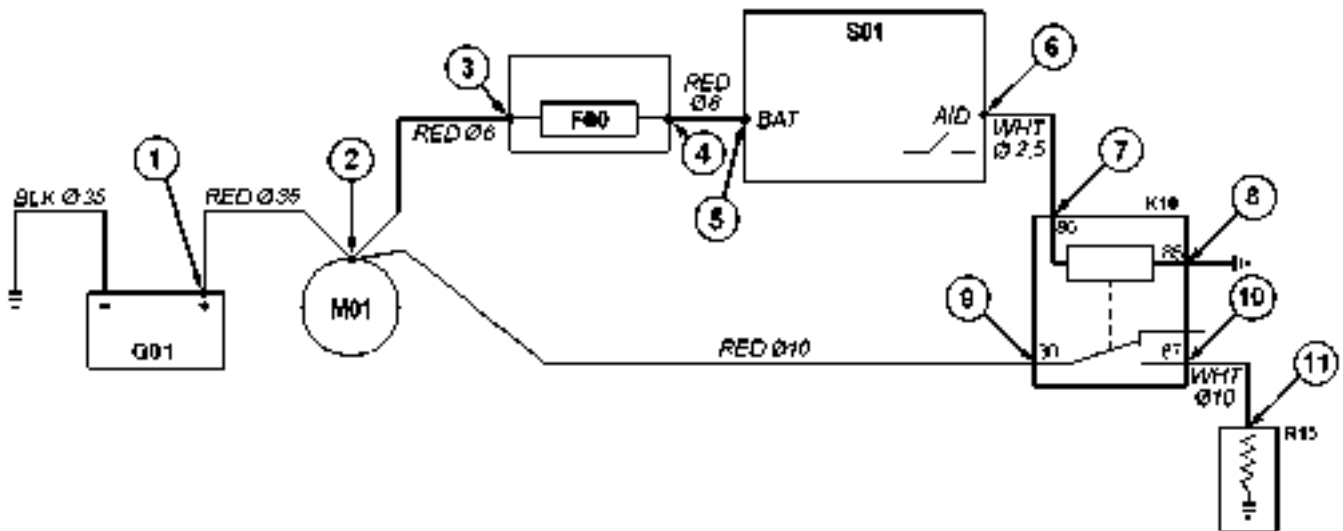
Result must be same as battery voltage.

Result:

YES:Check " [R01 - Intake Air Heater \(3-Cyl.\)](#) " and replace if necessary. END OF TEST.

NO:Check for corroded connections or broken white wire between main switch S01 and intake air heater R01.

SE01E - Intake Air Heater 4-Cyl. Tractors, Diagnostic Schematic and Circuit Test



AT17333

Intake air heater test points

LEGEND:

- 1 - 11 Test points
- F00 Main fuse
- G01 Alternator
- K10 Intake air heater relay
- M01 Starter motor
- R15 Intake air heater (4-cyl.)
- S01 Main switch

Meet following requirements:

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Intake Air Heater Test

(1) Check voltage at battery posts

Action:

Result must be minimum 11.8 volt direct-current.

Result:

YES: [GO TO 2](#)

NO: Test and charge battery (replace if necessary)

(2) Check voltage at starter terminals M01

Action:

Location: [XM01 - Connector for Starter Motor M01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken wires between battery and starter motor.

(3) Check voltage at F00 main fuse input

Action:

Location: [XF00 - 2-Pin Connector for Main Fuse F00](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for corroded connections or broken red wire between starter motor M01 and fuse box on alternator G02.

(4) Check voltage at F00 main fuse output

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check fuse F00 and replace if necessary. If fuse is good, check for corroded or loose terminals.

(5) Check voltage at BAT terminal of main switch S01

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded connections or broken red wire between main fuse and main switch S01.

(6) Check voltage at AID terminal of main switch S01

Action:

Main switch in ACC position.

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: Check " [S01 - Main Switch](#) " and replace if necessary.

(7) Check voltage at white wire terminal 86 of intake air heater relay K10

Action:

Location: [XK10 - 4-Pin Connector for Intake Air Heater Relay K10](#)

Main switch in ACC position.

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO: Check for corroded connections or broken white wire between main switch S01 and intake air heater relay K10.

(8) Check ground connection at terminal 85 of intake air heater relay K10

Action:

Check ground connection.

Result:

YES: [GO TO 9](#)

NO: Check continuity to ground of black wire.

(9) Check voltage at red wire terminal 30 of intake air heater relay K10

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 10](#)

NO: Check for corroded connections or broken red wire between intake air heater relay K10 and starter motor M01.

(10) Check voltage at white wire terminal 87 of intake air heater relay K10

Action:

Main switch in ACC position.

Result must be same as battery voltage.

Result:

YES: [GO TO 11](#)

NO: Check " [K10 - Intake Air Heater Relay](#) " and replace relay if necessary.

(11) Check voltage at white wire terminal of intake air heater R15

Action:

Location: [XR15 - 1-Pin Connector for Intake Air Heater R15 \(4-Cyl.\)](#)

Main switch in ACC position.

Result must be same as battery voltage.

Result:

YES: Check " [R15 - Intake Air Heater \(4-Cyl.\)](#) " and replace if necessary. END OF TEST

NO: Check for corroded connections or broken white wire between intake air heater relay K10 and intake air heater R15.

Group S02 - SE02 - Instrument Panel

SE02 - Instrument Panel (Summary of References)

[SE02 - Power Supply to Instrument Panel, Diagnostic Schematic and Circuit Test](#)

[SE02A - Fuel Gauge, Temperature Gauge, Rev Counter, Diagnostic Schematic and Circuit Test](#)

[SE02B - Air Filter Restriction Indicator, Diagnostic Schematic and Circuit Test](#)

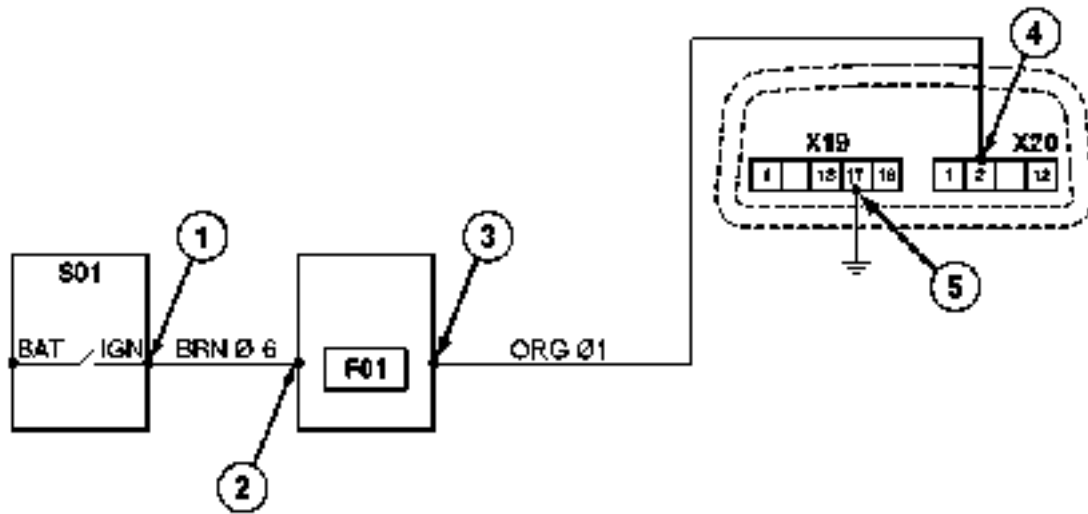
[SE02C - Engine Oil Pressure Indicator, Diagnostic Schematic and Circuit Test](#)

[SE02E - Transmission Speed Sensor B06, Diagnostic Schematic and Circuit Test](#)

[SE02F - Engine Speed Sensor B72, Diagnostic Schematic and Circuit Test](#)

[SE02G - Calibration Switch of Digital Instrument S51 \(EHM or EHM II\), Diagnostic Schematic and Circuit Test](#)

SE02 - Power Supply to Instrument Panel, Diagnostic Schematic and Circuit Test



AT 17349

Power supply to instrument panel

LEGEND:

- F01 15 amp fuse
- S01 Main switch
- X19 18-pin connector
- X20 12-pin connector

Meet following requirements:

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Power Supply to Instrument Panel

(1) Check voltage at IGN terminal of main switch S01

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test .](#)

(2) Check voltage at F01 fuse input of fuse box

Action:

Location: XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken brown wire between main switch S01 and fuse box.

(3) Check voltage at F01 fuse output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for failed fuse F01. Replace fuse if failed. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at orange wire terminal 2 of 12-pin connector X20 for instrument panel

Action:

Location: [X20 - 12-Pin Connector for Instrument Panel](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken orange wire between fuse box and instrument panel connector.

(5) Check ground connection at black wire terminal 17 of 18-pin connector X19 for instrument panel

Action:

Location: [X19 - 18-Pin Connector for Instrument Panel](#)

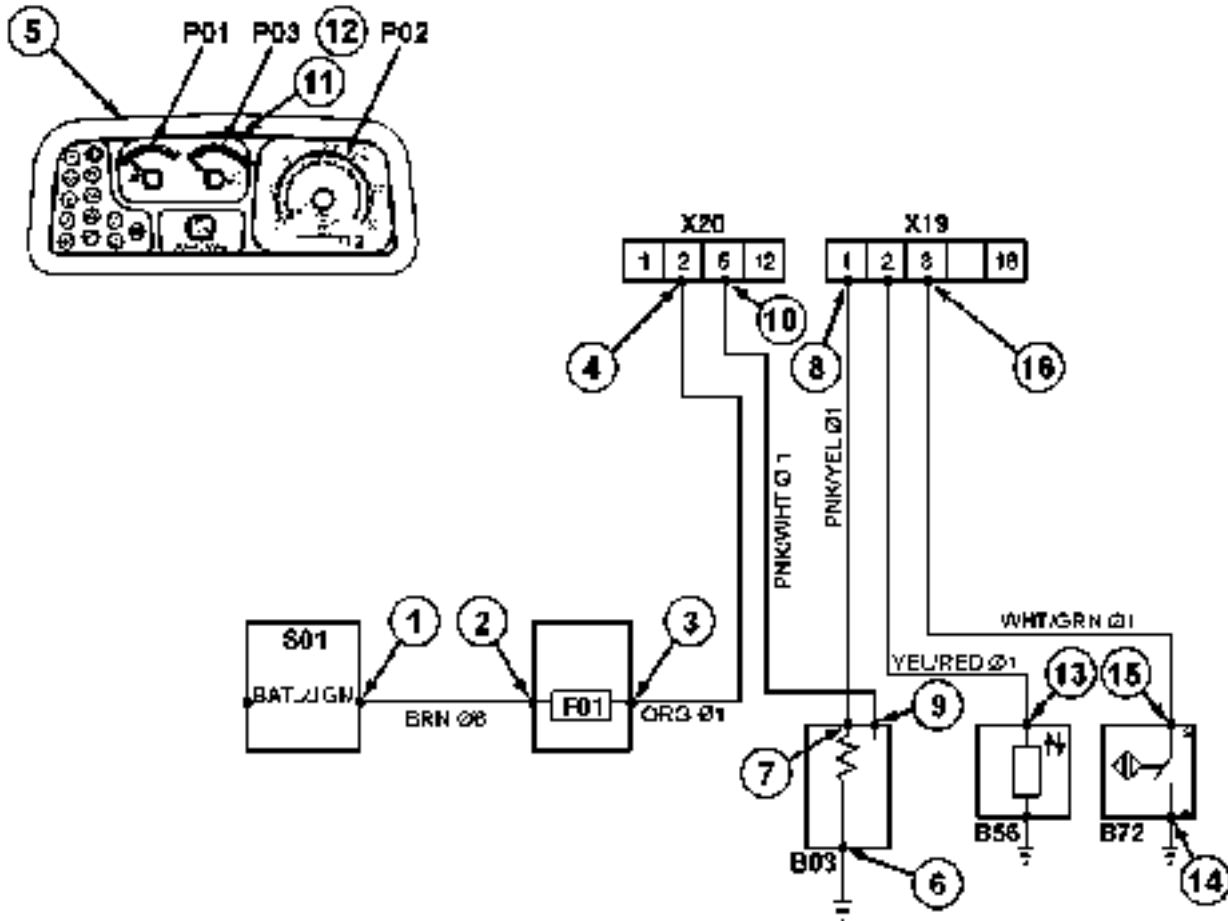
Check ground connection.

Result:

YES: Check instrument panel. Repair or replace as necessary. END OF TEST.

NO: Check continuity to ground of black wire.

SE02A - Fuel Gauge, Temperature Gauge, Rev Counter, Diagnostic Schematic and Circuit Test



AT15706

Instrument panel test - fuel gauge, temperature gauge, rev counter

LEGEND:

- 1 - 16 Test points
- B03 Fuel level sensor
- B56 Coolant temperature sensor
- B72 Engine speed sensor
- F01 10 amp fuse
- P01 Fuel gauge instrument
- P02 Rev counter
- P03 Coolant temperature gauge
- S01 Main switch
- X19 18-pin connector for instrument panel
- X20 12-pin connector for instrument panel

Meet following requirements:

- Gear shift lever in neutral position.
- PTO disengaged.

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Fuel Gauge, Temperature Gauge and Rev Counter Test

(1) Check voltage at IGN terminal of main switch S01

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test .](#)

(2) Check voltage at F01 fuse input of fuse box

Action:

Location: XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken brown wire between main switch and fuse box.

(3) Check voltage at F01 fuse output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for failed fuse F01. Replace fuse if failed. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at orange wire terminal 2 of 12-pin connector X20 for instrument panel

Action:

Location: [X20 - 12-Pin Connector for Instrument Panel](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken orange wire between fuse box and instrument panel connector.

(5) Fuel Gauge Circuit: Read the fuel gauge instrument (P01)

Action:

Remove wire from center terminal from fuel gauge side.

Gauge indicates empty.

Result:

YES: [GO TO 6.](#)

NO: Check for corroded connections or broken splice of pink/white wire between instrument panel connector and fuel gauge instrument.

(6) Check ground connection at black wire terminal of fuel level sensor B03

Action:

Location: [XB03 - 3-Pin Connector for Fuel Level Sensor B03](#)

Check ground connection.

Result:

YES: [GO TO 7](#)

NO: Check continuity to ground of black wire.

(7) Check voltage at pink/yellow wire of fuel level sensor B03

Action:

Remove wire from fuel level sensor B03.

Result must be same as battery voltage.

Result:

YES: [GO TO 9.](#)

NO: [GO TO 8.](#)

(8) Check voltage at pink/yellow wire terminal 1 of 18-pin connector X19 for instrument panel

Action:

Remove wire from fuel level sensor B03.

Location: [X19 - 18-Pin Connector for Instrument Panel](#)

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or broken pink/yellow wire between fuel level sensor B03 and terminal 1 of 18-pin connector X19 for instrument panel.

NO: Check instrument panel and replace if necessary. [GO TO 14.](#)

(9) Measure resistance at fuel level sensor B03

Action:

Main switch in OFF position.

Use a long wire to raise and lower sensor float.

Resistance smoothly increases/decreases between 7 and 330 ± 15 ohm as float is raised and lowered.

Result:

YES: [GO TO 10.](#)

NO: Replace " [B03 - Fuel Level Sensor](#) ".

(10) Measure resistance at terminal 5 of 12-pin connector X20 for instrument panel

Action:

Main switch in OFF position.

Use a long wire to raise and lower sensor float.

Resistance smoothly increases/decreases between 7 and 330 ± 15 ohm as float is raised and lowered.

Result:

YES: [GO TO 11.](#)

NO: Check for corroded connections or broken pink/white wire between fuel level sensor B03 and instrument panel connector.

(11) Coolant Temperature Gauge Circuit: Read the temperature gauge

Action:

Remove wire from temperature sensor B56.

Location: [XB56/1 - 1-Pin Connector for Coolant Temperature Sensor B56/1 \(3-Cyl. only\)](#) or [B56/2 - Coolant Temperature Sensor \(4-Cylinder only\)](#)

Coolant temperature gauge P03 indicates COLD.

Result:

YES: [GO TO 12.](#)

NO: Replace instrument panel if necessary.

(12) Read the coolant temperature gauge P03

Action:

Connect the wire from temperature sensor B56 to ground.

Gauge indicates HOT.

Result:

YES: [GO TO 13.](#)

NO: Check for corroded connections or broken yellow/red wire between temperature sensor and terminal 2 of 18-pin connector X19 for instrument panel. If wire is good, replace instrument panel.

(13) Measure resistance at temperature sensor B56

Action:

Remove wire from temperature sensor B56.

→NOTE:

Check resistance at various temperatures.

60°C (140°F) - 134 ± 13.5 ohm

90°C (194°F) - 51.2 ± 4.3 ohm

100°C (212°F) - 38.5 ± 3 ohm

→NOTE:

Test to be made on all temperatures.

Result:

YES: [GO TO 14.](#)

NO: Replace " [B56/1 - Coolant Temperature Sensor \(3-Cylinder only\)](#) ".

(14) Rev Counter Circuit: Check ground connection at black wire terminal of engine speed sensor B72

Action:

Location: [XB72 - 2-Pin Connector for Engine Speed Sensor B72](#)

Check ground connection.

Result:

YES: [GO TO 15.](#)

NO: Check continuity to ground of black wire.

(15) Check voltage at white/green wire terminal of engine speed sensor B72

Action:

Engine operating at slow idle.

Sensor output voltage - 1 volt alternating current.

→NOTE:

Sensor coil must have 475 ±75 ohm across the terminals and a minimum output of 1 volt.

Result:

YES:GO TO 21.

NO:Check or replace magnetic pickup sensor.

(16) Check voltage at white/green wire terminal 3 of 18-pin connector X19 for instrument panel

Action:

Engine operating at slow idle.

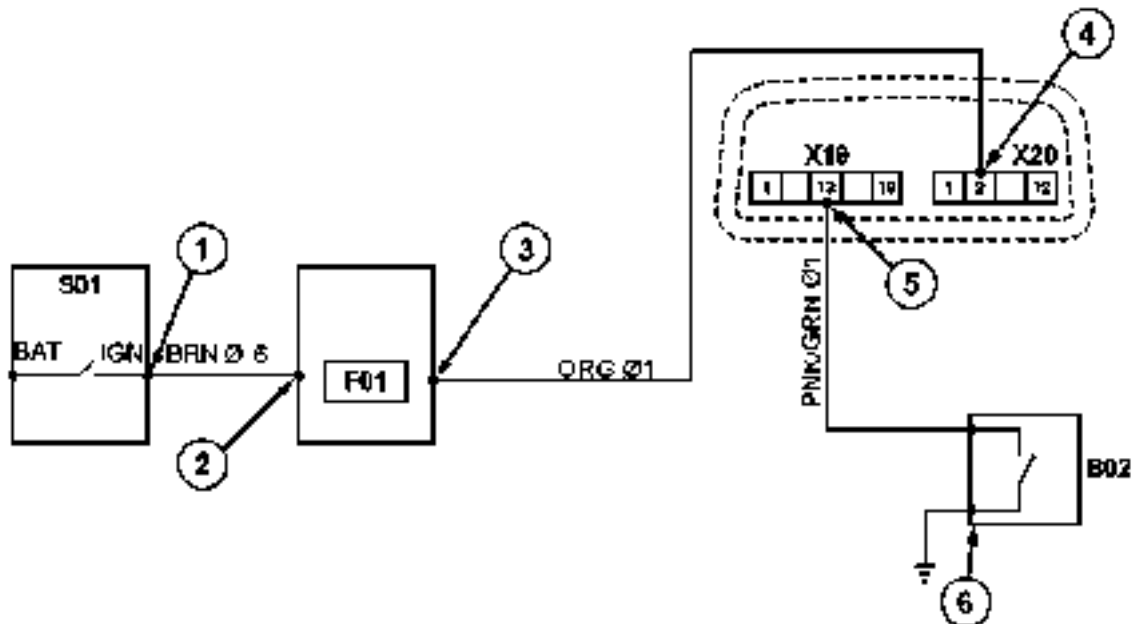
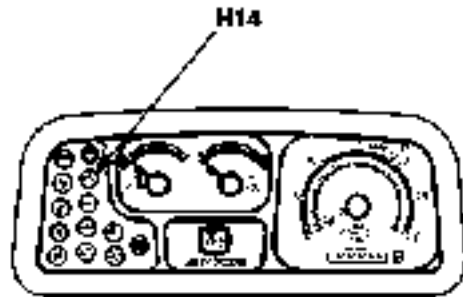
Sensor output voltage - 1 volt alternating current.

Result:

YES:END OF TEST.

NO:Check for corroded connection or broken white/green wire between instrument panel connector and rev counter. If rev counter does not function (needle on "0"), replace instrument panel.

SE02B - Air Filter Restriction Indicator, Diagnostic Schematic and Circuit Test



AT15806

Instrument panel test - air filter restriction indicator

Meet following requirements:

- Main switch in RUN (1) position.
- PTO disengaged.
- Gear shift lever in neutral position.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points.
- Meter on DC volt.

Air Filter Restriction Indicator Test

(1) Check voltage at "IGN" terminal of main switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at F01 fuse input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken brown wire between main switch and fuse box.

(3) Check voltage at F01 fuse output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for failed fuse F01. Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at orange wire terminal 2 of 12-pin connector X20 for instrument panel

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken orange wire between fuse box and instrument panel connector.

(5) Check ground connection at pink/green wire terminal 13 of 18-pin connector X19 for instrument panel

Action:

(Remove connector from air restriction switch and place to ground point)

Check ground connection.

Result:

YES: Check air filter restriction indicator H14 (glow up) and instrument panel. Repair or replace if it is necessary.

NO: Check for corroded connections or broken pink/green wire between instrument panel connector and air restriction switch. Repair or replace instrument panel. [GO TO 6.](#)

(6) Check ground connection at black wire terminal of air restriction switch terminal

Action:

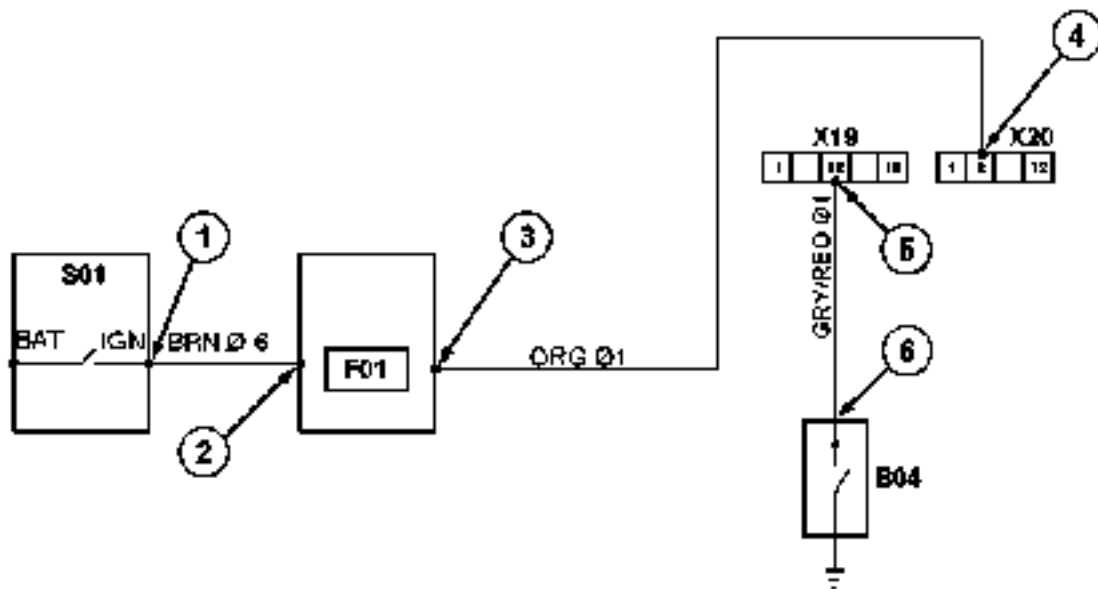
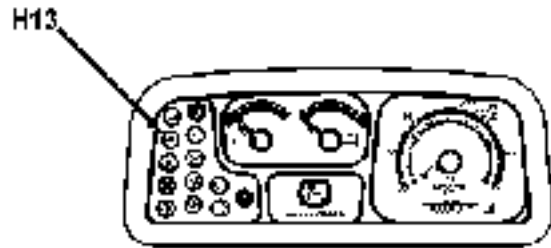
Check ground connection.

Result:

YES: Check air restriction switch. Repair or replace if it is necessary. END OF TEST.

NO: Check continuity to ground of black wire.

SE02C - Engine Oil Pressure Indicator, Diagnostic Schematic and Circuit Test



AT15725

Instrument panel test - oil pressure indicator

Meet following requirements:

- Main switch in RUN (1) position.
- PTO disengaged.
- Gear shift lever in neutral position.
- Connector removed from oil pressure switch.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points.
- Meter on DC volt.

Oil Pressure Indicator Test

(1) Check voltage at "IGN" terminal of main switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at F01 fuse input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken brown wire between main switch and fuse box.

(3) Check voltage at F01 fuse output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for failed fuse F01. Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at orange wire terminal 2 of 12-pin connector X20 for instrument panel

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken orange wire between fuse box and instrument panel connector.

(5) Check ground connection at terminal 12 of 18-pin connector X19 for instrument panel

Action:

Check ground connection.

Result:

YES: Check oil pressure indicator H13 (glow up) and instrument panel. Repair or replace if it is necessary.

NO: [GO TO 6.](#)

(6) Measure resistance at terminals of oil pressure switch

Action:

(Multimeter on 1 ohm scale)

Result: Maximum 0.5 ohm resistance (switch contacts closed)

→NOTE:

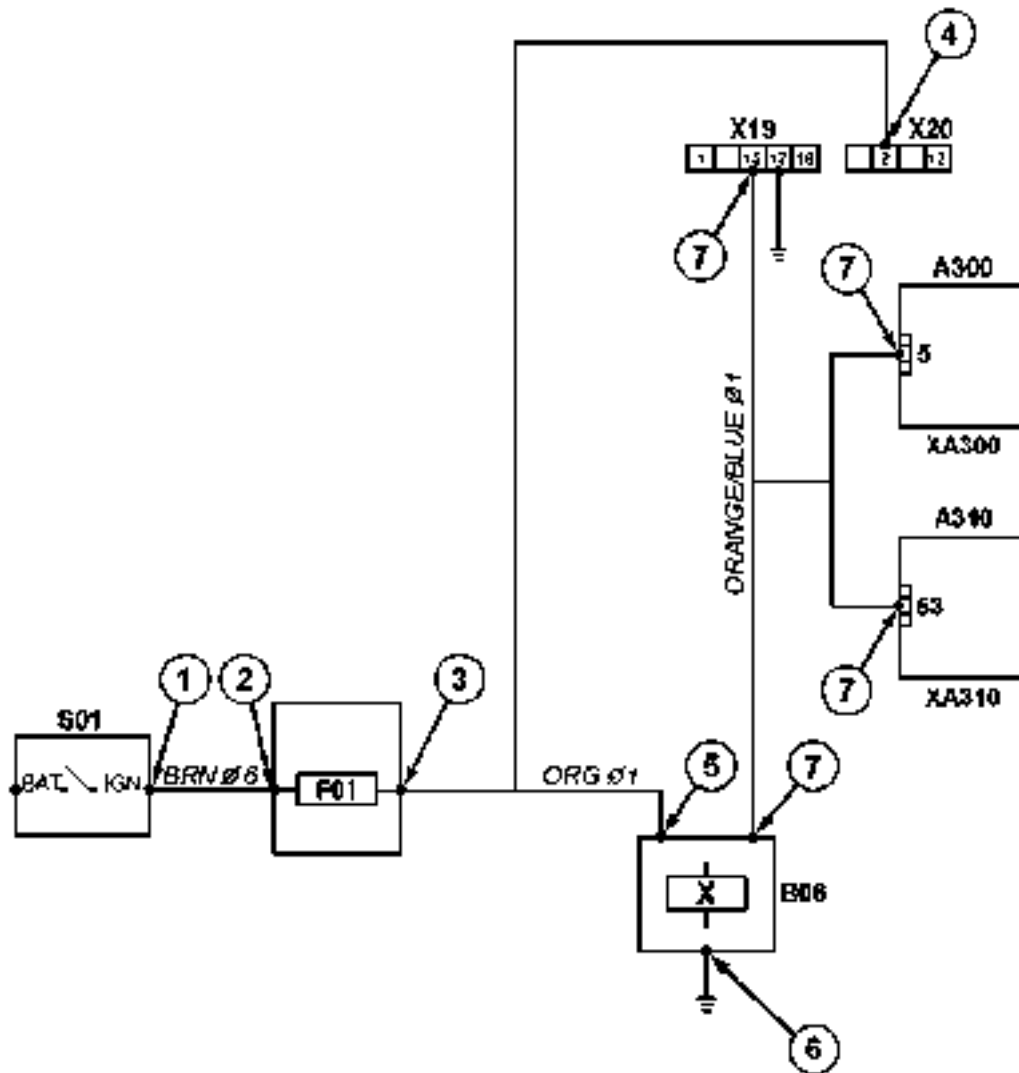
Oil pressure switch contacts open when engine oil pressure reaches 38 to 72 kPa (0.38 to 0.72 bar ; 5.5 to 10.5 psi)

Result:

YES:Check for corroded connections or broken grey/red wire between instrument panel connector and oil pressure switch. END OF TEST.

NO:Replace oil pressure switch.

SE02E - Transmission Speed Sensor B06, Diagnostic Schematic and Circuit Test



AT115734

Transmission speed sensor B06

LEGEND:

- A300 EHM control unit
- A310 EHM II control unit
- B06 Transmission speed sensor
- F01 10 amp fuse
- S01 Main switch
- X19 18-pin connector for instrument panel
- X20 12-pin connector for instrument panel
- XA300/2 56-pin connector for EHM control unit A300
- XA310 56-pin connector for EHM II control unit A310

Meet following requirements:

- Main switch in IGN position.

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Transmission Speed Sensor B06 Test

(1) Check voltage at IGN terminal of main switch S01

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#).

(2) Check voltage at F01 fuse input of fuse box

Action:

Location: XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken brown wire between main switch and fuse box.

(3) Check voltage at F01 fuse output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for failed fuse F01. Replace fuse if failed. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at orange wire terminal 2 of 18-pin connector X19 of instrument panel

Action:

Location: [X19 - 18-Pin Connector for Instrument Panel](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check for corroded connections or broken orange wire between fuse box and instrument panel connector.

(5) Check voltage at transmission speed sensor B06

Action:

Location: [XB06 - 3-Pin Connector for Transmission Speed Sensor B06](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded connections or broken orange wire between fuse box and transmission speed sensor connector.

(6) Check ground connection at black wire of transmission speed sensor terminal

Action:

Check ground connection.

Result:

YES: [GO TO 7](#)

NO: Check continuity to ground of black wire.

(7) Check continuity between transmission speed sensor B06, 18-pin connector X19 of instrument panel and EHM control unit A300 or EHM II control unit A310

Action:

4.1

Check continuity between transmission speed sensor B06 and terminal 15 of 18-pin connector X19 for instrument panel.

Result:

YES:GO TO 4.2.

NO:Check for corroded connections or broken wire between transmission speed sensor B06 and 18-pin connector X19.

Action:

4.2

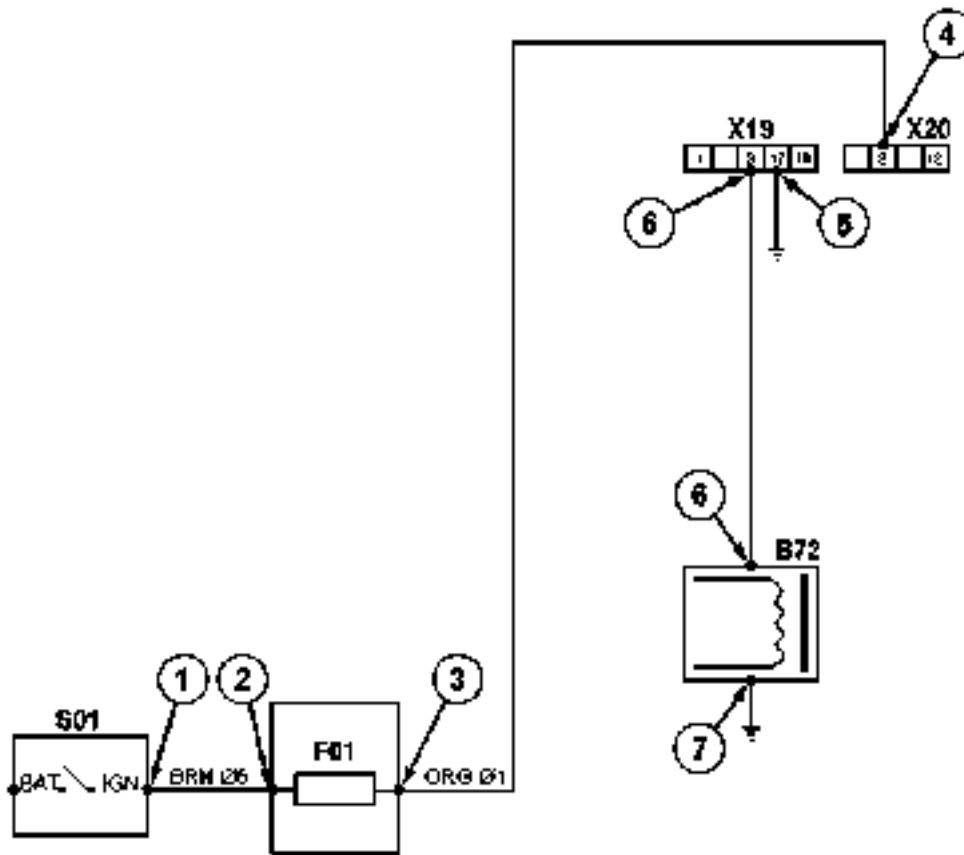
Check continuity between transmission speed sensor B06 and terminal 5 of 12-pin connector XA300/2 for EHM control unit A300 or terminal 53 of 56-pin connector XA310 for EHM II control unit A310.

Result:

YES:Replace [B06 - Transmission Speed Sensor](#) if failed. END OF TEST.

NO:Check for corroded connections or broken wire between transmission speed sensor and EHM or EHM II control unit.

SE02F - Engine Speed Sensor B72, Diagnostic Schematic and Circuit Test



AT15736

Engine speed sensor B72

LEGEND:

- B72 Transmission speed sensor
- F01 10 amp fuse
- S01 Main switch
- X19 18-pin connector for instrument panel
- X20 12-pin connector for instrument panel

Meet following requirements:

- Main switch in IGN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Engine Speed Sensor B72 Test

(1) Check voltage at IGN terminal of main switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at F01 fuse input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken brown wire between main switch and fuse box.

(3) Check voltage at F01 fuse output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for failed fuse F01. Replace fuse if failed. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at orange wire terminal 2 of 12-pin connector X20 for instrument panel

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken orange wire between fuse box and 12-pin connector X20 for instrument panel.

(5) Check ground connection at black wire terminal 17 of 18-pin connector X19 for instrument panel

Action:

Check ground connection.

Result:

YES: [GO TO 6.](#)

NO: Check continuity to ground of black wire

(6) Check continuity between terminal 3 of 18-pin connector X19 for instrument panel and terminal 1 of XB72 engine speed sensor connector

Action:

Check continuity between terminal 3 of 18-pin connector X19 for instrument panel and terminal 1 of 2-pin connector XB72 for engine speed sensor B72.

Result:

YES: [GO TO 7.](#)

NO: Check for corroded connections or broken wire between instrument panel connector and engine speed sensor connector.

(7) Check ground connection at black wire terminal of XB72 engine speed sensor connector

Action:

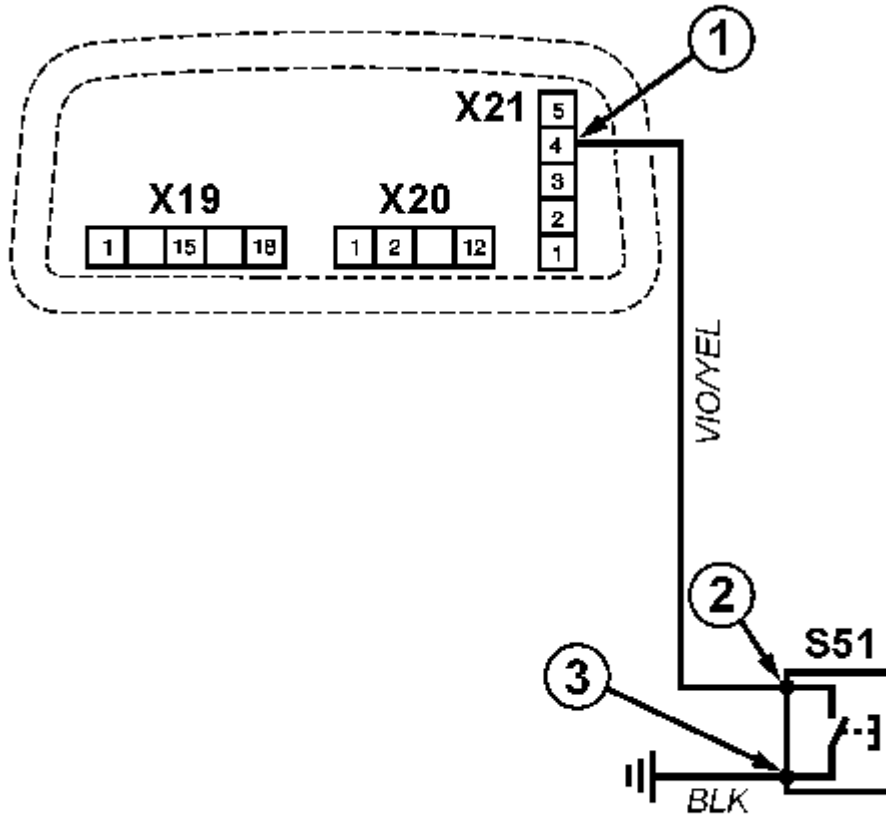
Check ground connection.

Result:

YES: Replace engine speed sensor if failed. END OF TEST.

NO: Check continuity to ground of black wire

SE02G - Calibration Switch of Digital Instrument S51 (EHM or EHM II), Diagnostic Schematic and Circuit Test



AT17359

Calibration switch of digital instrument S51

LEGEND:

- 1 - 3 Test points
- S51 Calibration switch of digital instrument (EHM or EHM II)
- X21 5-pin connector for instrument panel (EHM or EHM II)

Meet following requirements:

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Calibration Switch of Digital Instrument S51

(1) Check voltage at violet/yellow wire terminal 4 of 5-pin connector X21

Action:

Location: [X21 - 5-Pin Connector for Instrument Panel \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: Check [SE02 - Power Supply to Instrument Panel, Diagnostic Schematic and Circuit Test](#).

(2) Check voltage at violet/yellow wire terminal 1 of 2-pin connector XS51

Action:

Location: [XS51 - 2-Pin Connector for Calibration Switch S51 of Digital Instrument \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: GO TO 3

NO: Check for corroded connections or broken violet/yellow wire between 2-pin connector XS51 and 5-pin connector X21.

(3) Check ground connection at black wire terminal 2 of 2-pin connector XS51

Action:

Check ground connection.

Result:

YES: Check " [S51 - Calibration Switch of Digital Instrument \(EHM or EHM II\)](#) ". Repair or replace as necessary. END OF TEST.

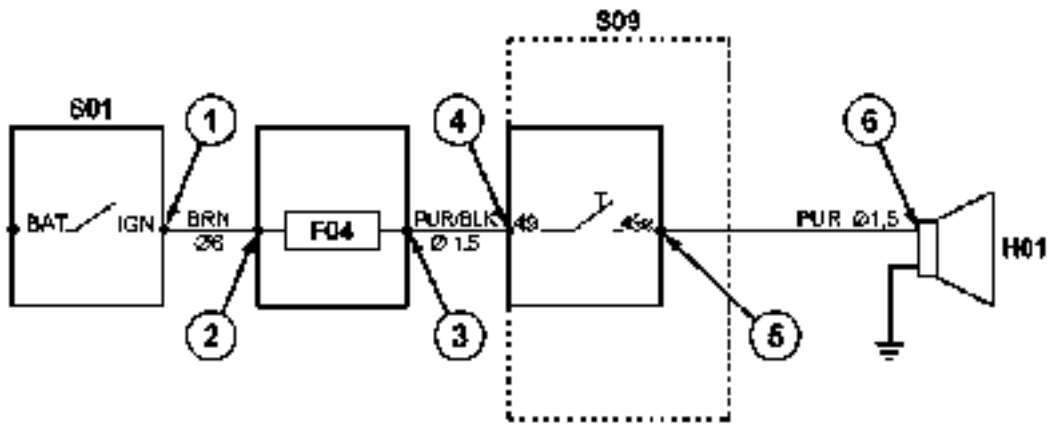
NO: Check continuity to ground of black wire.

Group S03 - SE03 - Horn

SE03 - Horn (Summary of References)

[SE03 - Horn, Diagnostic Schematic and Circuit Test](#)

SE03 - Horn, Diagnostic Schematic and Circuit Test



AT15724

Horn test points

Meet following requirements:

- Main switch in RUN (1) position.
- Gear shift lever in neutral position.
- PTO disengaged.
- Remove connectors from the horn.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points.
- Meter on DC volt.

Horn Test

(1) Check voltage at "IGN" terminal of main switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test.](#)

(2) Check voltage at fuse F04 input of fuse box

Action:

(Push horn button and hold)

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken purple wire between horn switch and fuse box.

(3) Check voltage at fuse F04 output of fuse box

Action:

(Push horn button and hold)

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for failed fuse F04. If fuse is good, check for corroded or loose terminals. Replace horn switch.

(4) Check voltage at purple/black wire terminal of light and horn switch S09

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken purple wire between main switch and horn switch.

(5) Check voltage at purple wire terminal of light and horn switch S09

Action:

(Push horn button and hold)

Result must be same as battery voltage.

Result:

YES: [GO TO 6.](#)

NO: Check for corroded connections or loose terminals. If connection is good, replace horn switch.

(6) Check voltage at purple wire terminal of horn

Action:

(Push horn button and hold)

Result must be same as battery voltage.

Result:

NO: Check for corroded connections or broken purple wire between fuse box and horn wire terminals. If connections or wire are good, horn is bad and must be replaced.

Group S06 - SE06 - Lighting System

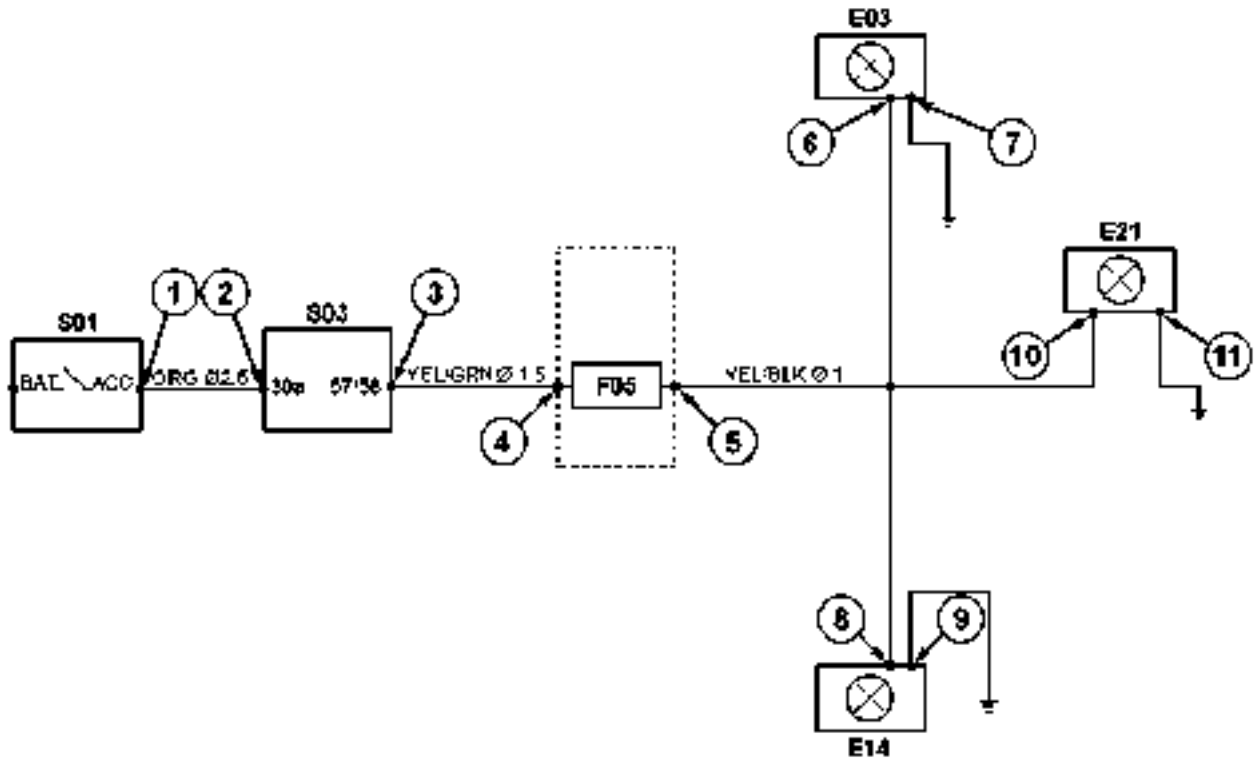
SE06 - Lighting System (Summary of References)

[SE06A - Left Clearance Light, Right Tail Light and License Plate Light, Diagnostic Schematic and Circuit Test](#)

[SE06A - Right Clearance Light, Left Tail Light and Instrument Panel Light, Diagnostic Schematic and Circuit Test](#)

[SE06B - Headlights, Diagnostic Schematic and Circuit Test](#)

SE06A - Left Clearance Light, Right Tail Light and License Plate Light, Diagnostic Schematic and Circuit Test



AT15723

Lighting system test - left clearance light, right tail light, rear work lights and license plate light

Meet following requirements:

- Main switch in RUN (1) position.
- Gear shift lever in neutral position.
- Light switch in position 1.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points.
- Meter on DC volt.

Left Clearance Light, Right Tail Light and License

Plate Light Test

(1) Check voltage at "ACC" terminal of main switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at terminal 30a of light switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken orange wire between main switch and light switch.

(3) Check voltage at terminal 57/58 of light switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check that light switch is in position 1, 2 or 3. If switch is in one of these positions, switch is bad. Replace if necessary.

(4) Check voltage at F05 fuse input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken yellow/green wire between light switch and fuse box.

(5) Check voltage at F05 fuse output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6.](#)

NO: Check for failed fuse F05. Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(6) Check voltage at yellow/black wire terminal of license plate light connector

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 7.](#)

NO: Check for corroded connections or broken yellow/black wire between fuse box (F05 fuse terminal) and license plate light connector.

(7) Check ground connection at black wire terminal of license plate light

Action:

Check ground connection.

Result:

YES:Check for failed bulb. Replace bulb if it is failed. [GO TO 8.](#)

NO:Check continuity to ground of black wire.

(8) Right Tail Light Circuit: Check voltage at yellow/black wire terminal of right tail light connector

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 9.](#)

NO:Check for corroded connections or broken yellow/black wire between fuse box (F05 fuse terminal) and right tail light connector.

(9) Check ground connection at black wire terminal of right tail light

Action:

Check ground connection.

Result:

YES:Check for failed bulb. Replace bulb if it is failed. [GO TO 10.](#)

NO:Check continuity to ground of black wire.

(10) Left Clearance Light Circuit: Check voltage at yellow wire terminal of instrument panel connector

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 11.](#)

NO: Check for corroded connections or broken yellow/black wire between fuse box (F05 fuse terminal) and left clearance light connector.

(11) Check ground connection at black wire terminal of left clearance light

Action:

Check ground connection.

Result:

YES: Check for failed bulb. Replace bulb if it is failed. END OF TEST.

NO: Check continuity to ground of black wire.

Instrument Panel Light Test

(1) Check voltage at "ACC" terminal of main switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at terminal 30a of light switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken orange wire between main switch and light switch.

(3) Check voltage at terminal 57/58 of light switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check that light switch is in position 1, 2 or 3. If switch is in one of these positions, switch is bad. Replace if necessary.

(4) Check voltage at F06 fuse input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken yellow/green wire between light switch and fuse box.

(5) Check voltage at F06 fuse output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6.](#)

NO: Check for failed fuse F06. Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(6) Check voltage at yellow wire terminal of right clearance light connector

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 7.](#)

NO: Check for corroded connections or broken yellow wire between fuse box (F06 fuse terminal) and right clearance light connector.

(7) Check ground connection at black wire terminal of right clearance light

Action:

Check ground connection.

Result:

YES:Check for failed bulb. Replace bulb if it is failed. If bulb is good, [GO TO 8](#).

NO:Check continuity to ground of black wire.

(8) Left Tail Light Circuit: Check voltage at yellow wire terminal of left tail light connector

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 9](#).

NO:Check for corroded connections or broken wire between fuse box (F06 fuse terminal) and left tail light connector.

(9) Check ground connection at black wire terminal of left tail light

Action:

Check ground connection.

Result:

YES:Check for failed bulb. Replace bulb if it is failed. If bulb is good, [GO TO 10](#).

NO:Check continuity to ground of black wire.

(10) Instrument Panel Light Circuit: Check voltage at yellow wire terminal 3 of 12-pin connector X20 for instrument panel

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 11.](#)

NO: Check for corroded connections or broken wire between fuse box (F06 fuse terminal) and instrument panel connector.

(11) Check ground connection at black wire terminal 17 of 18-pin connector X19 for instrument panel

Action:

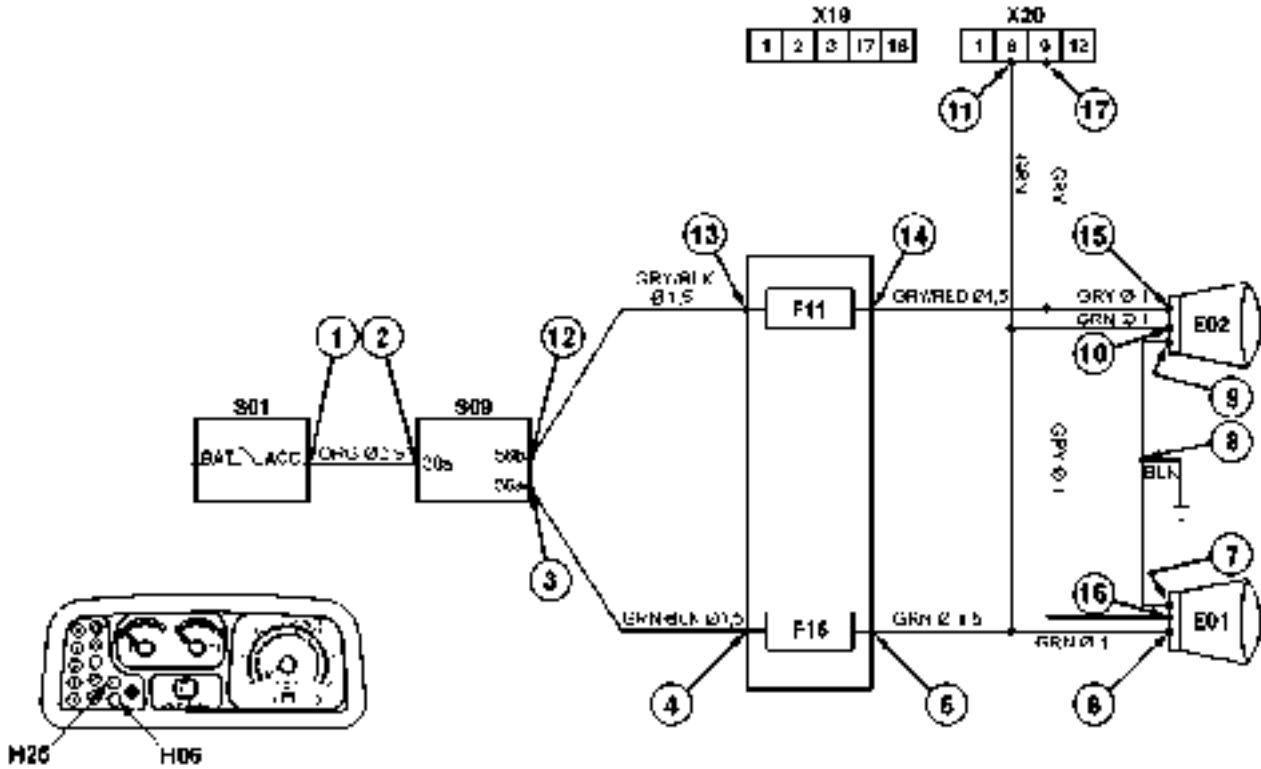
Check ground connection.

Result:

YES: Check for failed bulb and instrument. Replace if failed. END OF TEST.

NO: Check continuity to ground of black wire.

SE06B - Headlights, Diagnostic Schematic and Circuit Test



AT15721

Lighting system test - headlights

Meet following requirements:

- Main switch in RUN (1) position.
- Light switch in position 3.
- Gear shift lever in neutral position.
- Meter negative lead on numbered test points.
- Meter positive lead on numbered test points.
- Meter on DC volt

Headlight Test

High Beam Headlight Circuit

(1) Check voltage at "ACC" terminal of main switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test.](#)

(2) Check voltage at terminal 30a of light switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken orange wire between main switch and light switch.

(3) Check voltage at terminal 56a of light switch

Action:

(Main switch in RUN (1) position)

(Light switch in position (3))

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check that light switch is in position 3. If switch is in position 3, switch is bad. Replace if necessary.

(4) Check voltage at F15 fuse input of fuse box

Action:

(Main switch in RUN (1) position)

(Light switch in position (3))

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken green wire between light switch and fuse box.

(5) Check voltage at F15 fuse output of fuse box

Action:

(Main switch in RUN (1) position)

(Light switch in position (3))

Result must be same as battery voltage.

Result:

YES: [GO TO 6.](#)

NO: Check for failed fuse F15. Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(6) Check voltage at green wire terminal of right headlight connector

Action:

(Main switch in RUN (1) position)

(Light switch in position (3))

Result must be same as battery voltage.

Result:

YES: [GO TO 7.](#)

NO: Check for corroded connections or broken green wire between fuse F15 and right headlight connector.

(7) Check ground connection at black wire terminal of right headlight connector

Action:

Check ground connection.

Result:

YES: Check for failed bulb. Replace bulb if it is failed. [GO TO 9.](#)

NO: [GO TO 8.](#)

(8) Check ground connection at black wire connection of headlight connector

Action:

Check ground connection.

Result:

YES: Check for corroded connections or broken black wire between right headlight and headlight connector. [GO TO 9.](#)

NO: Check continuity to ground of black wire.

(9) Check ground connection at black wire terminal of left headlight connector

Action:

Check ground connection.

Result:

YES:Check for failed bulb. Replace bulb if it is failed. [GO TO 10.](#)

NO:Check for corroded connections or broken black wire between headlight connector and left headlight connector.

(10) Check voltage at green wire terminal of left headlight connector

Action:

(Main switch in RUN (1) position)

(Light switch in position (3))

Result must be same as battery voltage.

Result:

YES:Check for failed bulb. Replace bulb if it is failed. [GO TO 11.](#)

NO:Check for corroded connections or broken green wire between fuse F15 and left headlight connector.

(11) Check voltage at green wire terminal 8 of 12-pin connector X20 for instrument panel

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 12.](#)

NO:Check for corroded connections or broken green wire between instrument panel connector and fuse box.

(12) Low Beam Headlight Circuit: Check voltage at terminal 56b of light switch

Action:

(Main switch in RUN (1) position)

(Light switch in position (2))

Result must be same as battery voltage.

Result:

YES: [GO TO 13.](#)

NO: Check that light switch is in position 2. If switch is in position 2, switch is bad. Replace if necessary.

(13) Check voltage at F11 fuse input of fuse box

Action:

(Main switch in RUN (1) position)

(Light switch in position (2))

Result must be same as battery voltage.

Result:

YES: [GO TO 14.](#)

NO: Check for corroded connections or broken grey/black wire between light switch and fuse box.

(14) Check voltage at F11 fuse output of fuse box

Action:

(Main switch in RUN (1) position)

(Light switch in position (2))

Result must be same as battery voltage.

Result:

YES: [GO TO 15.](#)

NO: Check for failed fuse F11. Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(15) Check voltage at grey wire terminal of left headlight connector

Action:

(Main switch in RUN (1) position)

(Light switch in position (2))

Result must be same as battery voltage.

Result:

YES: [GO TO 16.](#)

NO: Check for corroded connections or broken grey wire between fuse box (F11 fuse terminal) and left headlight connector.

(16) Check voltage at grey wire terminal of right headlight connector

Action:

(Main switch in RUN (1) position)

(Light switch in position (2))

Result must be same as battery voltage.

Result:

YES:Check for failed bulb. Replace bulb if it is failed. [GO TO 17.](#)

NO:Check for corroded connections or broken grey wire.

(17) Check voltage at grey wire terminal 9 of 12-pin connector X20 for instrument panel

Action:

(Main switch in RUN (1) position)

(Light switch in position (2))

Result must be same as battery voltage.

Result:

YES:Check for failed bulb. Replace bulb if it is failed. END OF TEST.

NO:Check for corroded connections or broken grey wire between instrument panel connector and fuse box.

Group S07 - SE07 - Work Lights

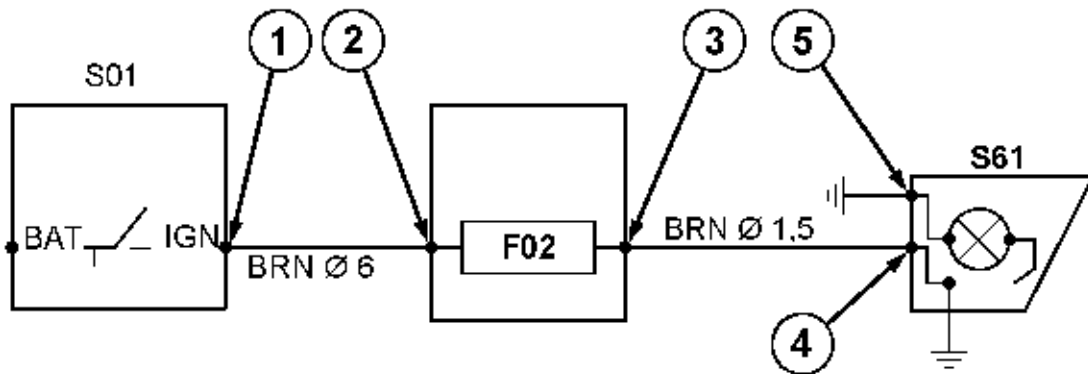
SE07 - Work Lights (Summary of References)

[SE07A - Rear Work Light with Switch S61, Diagnostic Schematic and Circuit Test](#)

[SE07B - Front Work Lights E18 \(Cab Only\), Diagnostic Schematic and Circuit Test](#)

[SE07B - Rear Work Lights E11 \(Cab Only\), Diagnostic Schematic and Circuit Test](#)

SE07A - Rear Work Light with Switch S61, Diagnostic Schematic and Circuit Test



AT15720

Rear work light test points

Meet following requirements:

- Main switch in RUN (1) position.
- Rear work light switch in on position.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points
- Meter on DC volts.

Rear Work Light Test

(1) Check voltage at "IGN" and "ACC" terminals of main switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test.](#)

(2) Check voltage at F02 fuse input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken brown wire between main switch and fuse box.

(3) Check voltage at F02 fuse output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for failed fuse F02. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at brown wire terminal of rear work light

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken brown wire between fuse box and rear work light.

(5) Check ground connection at black wire terminal of rear work light

Action:

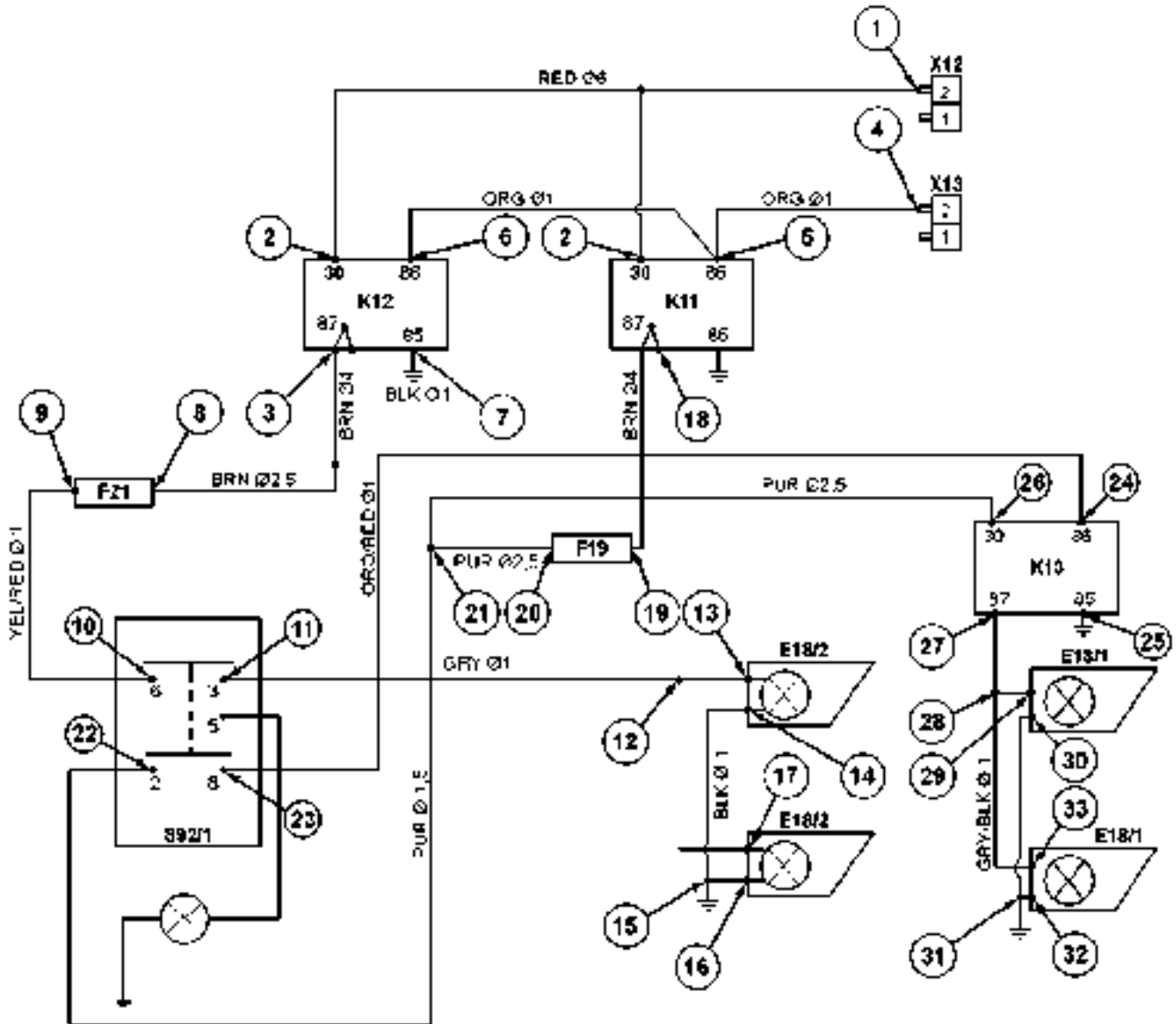
Check ground connection.

Result:

YES: Check for failed bulb. Replace if it is failed. END OF TEST.

NO: Check continuity to ground of black wire.

SE07B - Front Work Lights E18 (Cab Only), Diagnostic Schematic and Circuit Test



AT16807

Front work light test points (cab only)

Meet following requirements:

- Main switch in ACC or RUN position.
- Front work light switch in on position.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points.
- Meter on DC volts.

Front Work Light Test (Cab Only)

(1) Check voltage at red wire terminal 2 of 2-pin connector X12

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [F16 - Main Fuse for Cab Wiring Circuit](#) and see [Wiring Diagram "H" - Engine/Cab Wiring Harness](#) .

(2) Check voltage at terminal 30 of relay K11 and relay K12

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken wire between 2-pin connector X12 and relay K11 and relay K12.

(3) Check voltage at terminal 87 of relay K12

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 8.](#)

NO: Check for failed relay K12. Replace relay if it is failed. If relay is good, check for corroded or loose terminals and [GO TO 4](#) .

(4) Check voltage at orange wire terminal 2 of 2-pin connector X13

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Test main wiring and repair if necessary. See [Wiring Diagram "A" - Main Wiring Harness](#), [Wiring Diagram "F" - Engine Wiring Harness](#) and [Wiring Diagram "H" - Engine/Cab Wiring Harness](#).

(5) Check voltage at terminal 86 of relay K11

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6.](#)

NO: Check for corroded connections or broken orange wire.

(6) Check voltage at terminal 86 of relay K12

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 7.](#)

NO: Check for corroded connections or broken orange wire between relay K11 and relay K12.

(7) Check ground connection at black wire terminal of relay K12

Action:

Check ground connection.

Result:

YES:Check for failed relay K12. Replace relay if it is failed. If relay is good, [GO TO 8](#).

NO:Check continuity to ground of black wire.

(8) Check voltage at fuse F21 input of cab fuse box, located in the post on right-hand side

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 9](#).

NO:Check for corroded connections or broken wire between relay K12 and fuse F21.

(9) Check voltage at fuse F21 output of cab fuse box, located in the post on right-hand side

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 10](#).

NO:Check for failed fuse F21. Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(10) Check voltage at yellow/red wire terminal of front work light switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 11.](#)

NO: Check for corroded connections or broken wire between fuse F21 and front work light switch.

(11) Check voltage at grey wire terminal of front work light switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 12.](#)

NO: Check for failed front work light switch. Replace switch if it is failed. If switch is good, check for corroded or loose terminals.

(12) Check voltage at connection to front work lights E18/2 (outer)

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 13.](#)

NO: Check for corroded connections or broken wire between front work light switch and front work light connector (outer).

(13) Check voltage at grey wire terminal of left front work light E18/2L (outer)

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 14.](#)

NO: Check for corroded connections or broken wire between front work light connector (outer) and left front work light.

(14) Check ground connection at black wire terminal of left front work light E18/2L (outer)

Action:

Check ground connection.

Result:

YES: Check for failed bulb. Replace if it is failed.

NO: [GO TO 15.](#)

(15) Check ground connection at black wire connection of front work lights E18/2 (outer)

Action:

Check ground connection.

Result:

YES: [GO TO 16.](#)

NO: Check continuity to ground of black wire.

(16) Check ground connection at black wire terminal of right front work light E18/2R (outer)

Action:

Check ground connection.

Result:

YES: [GO TO 17.](#)

NO: Check continuity to ground of black wire.

(17) Check voltage at grey wire terminal of right front work light E18/2R (outer)

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 18.](#)

NO: Check for corroded connections or broken wire between front work light connector (outer) and right front work light.

(18) Check voltage at terminal 87 of relay K11

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 19.](#)

NO: Check ground connection on terminal 85 and for failed relay K11. Replace relay if it is failed. If relay is good, check for corroded or loose terminals.

(19) Check voltage at fuse F19 input of cab fuse box, located in the post on right-hand side

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 20.](#)

NO: Check for corroded connections or broken brown wire between relay K11 and fuse F19.

(20) Check voltage at fuse F19 output of cab fuse box, located in the post on right-hand side

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 21.](#)

NO: Check for failed fuse F19. Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(21) Check voltage connection to front work light connector

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 22.](#)

NO: Check for corroded connections or broken wire between fuse F19 and front work light connector.

(22) Check voltage at purple wire terminal of front work light switch S92/1

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 23.](#)

NO: Check for corroded connections or broken wire between front work light connector and front work light switch.

(23) Check voltage at orange/red wire terminal of front work light switch S92/1

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 24.](#)

NO: Check for failed front work light switch. Replace switch if it is failed. If switch is good, check for corroded or loose terminals.

(24) Check voltage at terminal 86 of relay K13

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 25.](#)

NO: Check for corroded connections or broken wire between front work light switch S92/1 and relay K13.

(25) Check ground connection at black wire terminal of relay K13

Action:

Check ground connection.

Result:

YES:Check for failed relay K13. Replace relay if it is failed. If relay is good, [GO TO 26](#).

NO:Check continuity to ground of black wire.

(26) Check voltage at terminal 30 of relay K13

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 27](#).

NO:Check for corroded connections or broken wire between front work light connector and relay K13.

(27) Check voltage at terminal 87 of relay K13

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 28](#).

NO:Check for failed relay K13. Replace relay if it is failed. If relay is good, check for corroded or loose terminals.

(28) Check voltage at connection to front work lights E18/1 (inner)

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 29.](#)

NO: Check for corroded connections or broken wire between relay K13 and front work light connector (inner).

(29) Check voltage at grey/black wire terminal of left work light E18/1L (inner)

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 30.](#)

NO: Check for corroded connections or broken wire between front work light connector (inner) and left work light (inner).

(30) Check ground connection at black wire terminal of left front work light E18/1L (inner)

Action:

Check ground connection.

Result:

YES: Check for failed bulb. Replace if it is failed. Check continuity to ground of black wire.

NO: [GO TO 31.](#)

(31) Check ground connection at black wire connection of front work lights E18/1 (inner)

Action:

Check ground connection.

Result:

YES: [GO TO 32.](#)

NO: Check continuity to ground of black wire.

(32) Check ground connection at black wire terminal of right front work light E18/1R (inner)

Action:

Check ground connection.

Result:

YES: [GO TO 33.](#)

NO: Check continuity to ground of black wire.

(33) Check voltage at grey/black wire terminal of right front work light E18/1R (inner)

Action:

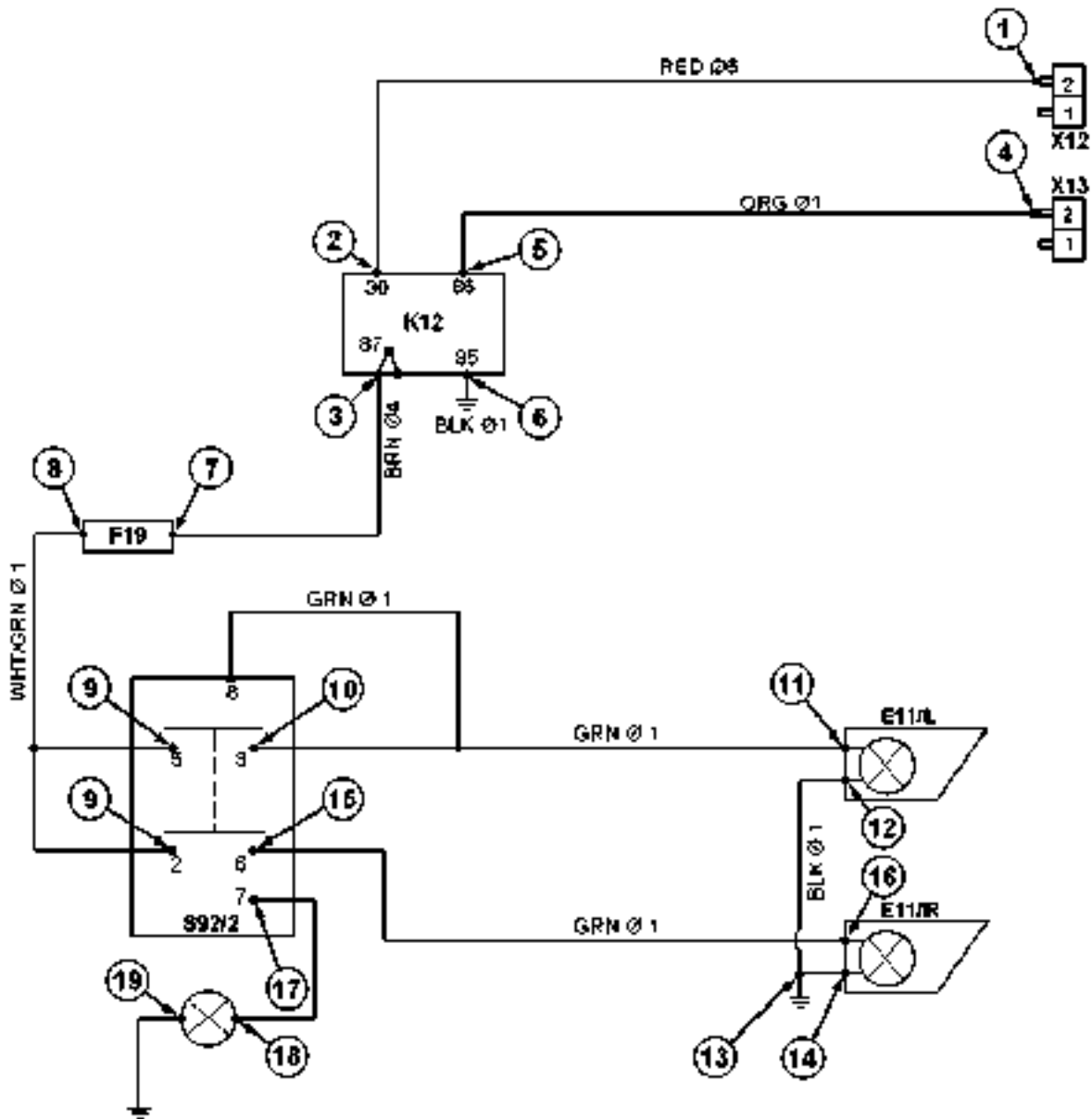
Result must be same as battery voltage.

Result:

YES: END OF TEST.

NO: Check for corroded connections or broken wire between front work light connector (inner) and right front work light (inner).

SE07B - Rear Work Lights E11 (Cab Only), Diagnostic Schematic and Circuit Test



AT15816

Rear work lights test points (cab only)

Meet following requirements:

- Main switch in ACC or RUN position.
- Rear work light switch in on position.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points
- Meter on DC volts.

Rear Work Lights Test (Cab Only)

(1) Check voltage at red wire terminal 2 of 2-pin connector X12

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: Check [F16 - Main Fuse for Cab Wiring Circuit](#) and see [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)

(2) Check voltage at terminal 30 of relay K12

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or break in wire between 2-pin connector X12 and relay K12.

(3) Check voltage at terminal 87 of relay K12

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: [GO TO 4](#)

(4) Check voltage at pink wire terminal 2 of 2-pin connector X13

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Test main wiring and repair if necessary. See [Wiring Diagram "A" - Main Wiring Harness](#), [Wiring Diagram "F" - Engine Wiring Harness](#) and [Wiring Diagram "H" - Engine/Cab Wiring Harness](#).

(5) Check voltage at terminal 86 of relay K12

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded connections or break in orange wire between terminal 2 of 2-pin connector X13 and relay K12.

(6) Check ground connection at black wire terminal of relay K12

Action:

Check ground connection.

Result:

YES: [GO TO 7](#)

NO: Check for failed relay K12. Replace relay if it is failed. If relay is good, check for corroded or loose terminals.

(7) Check voltage at fuse F19 input of cab fuse box, located in the post on right-hand side

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO: Check for corroded connections or break in wire between work light relay and fuse F19.

(8) Check voltage at fuse F19 output of cab fuse box, located in the post on right-hand side

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 9](#)

NO: Check for failed fuse F19. Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(9) Check voltage at white/green wire terminals of rear work light switch S92/2

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 10](#)

NO: Check for corroded connections or break in wire between fuse F19 and rear work light switch.

(10) Check voltage at green wire terminal of rear work light switch S92/2

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 11](#)

NO: Check for failed rear work light switch. Replace switch if it is failed. If switch is good, check for corroded or loose terminals.

(11) Check voltage at green wire connection to left rear work light E11/L

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 12](#)

NO: Check for corroded connections or break in wire between rear work light switch and left rear work light.

(12) Check ground connection at black wire terminal of left rear work light E11/L

Action:

Check ground connection.

Result:

YES: Check for failed bulb. Replace if it is failed. If bulb is good, [GO TO 15](#).

NO: [GO TO 13](#)

(13) Check ground connection at black wire connector of rear work lights E11

Action:

Check ground connection.

Result:

YES: [GO TO 14](#)

NO: Check continuity to ground of black wire.

(14) Check ground connection at black wire terminal of right rear work light E11/R

Action:

Check ground connection.

Result:

YES: [GO TO 15](#)

NO: Check for corroded connections or break in wire between right rear work light and ground connector.

(15) Check voltage at green wire terminal of rear work light switch S92/2

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 16](#)

NO: Check for failed rear work light switch S92/2. Replace switch if it is failed. If switch is good, check for corroded or loose terminals.

(16) Check voltage at green wire connection to right rear work light E11/R

Action:

Result must be same as battery voltage.

Result:

YES: Check for failed bulb. Replace if it is failed. If bulb is good, [GO TO 17](#).

NO: Check for corroded connections or break in wire between connection and right rear work light.

(17) Check voltage at green wire terminal of rear work light switch S92/2

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 18](#)

NO: Check for failed switch. Replace switch if it is failed. If switch is good, check for corroded connections or break in the wire to indicator light.

(18) Check voltage at connector to indicator light

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 19](#)

NO: Check for corroded connections or break in the wire between rear work light switch and indicator light.

(19) Check ground connection at black wire terminal of rear work light indicator

Action:

Check ground connection.

Result:

YES:END OF TEST

NO:Check for failed indicator. Replace if it is failed. Check continuity to ground of black wire.

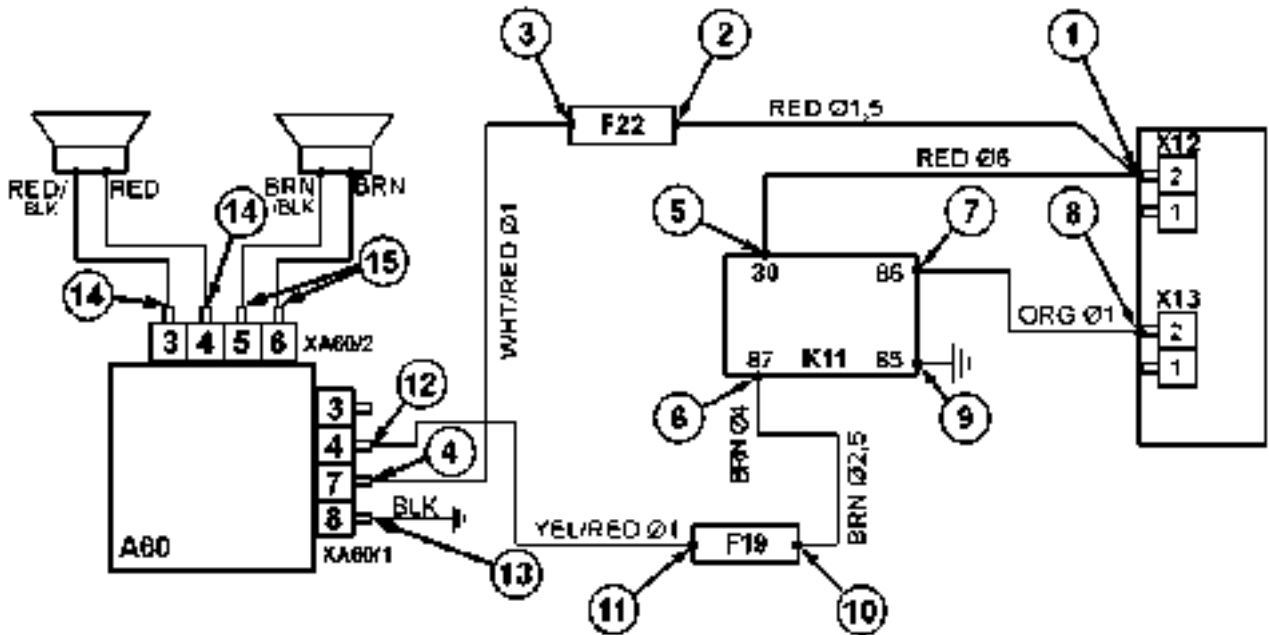
Group S09 - SE09 - Radio, Dome and Console Light

SE09 - Radio, Dome and Console Light (Summary of References)

[SE09A - Radio A60, Diagnostic Schematic and Circuit Test](#)

[SE09B - Dome Light E12, Diagnostic Schematic and Circuit Test](#)

SE09A - Radio A60, Diagnostic Schematic and Circuit Test



AT16909

Radio test points (cab only)

Meet following requirements:

- Main switch in ACC or RUN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) set for measuring continuity or volts (DC).

Radio Test (Cab Only)

(1) Check voltage at terminal 2 of 2-pin connector X12

Action:

Location: [X12 - 2-Pin Interconnection between Wiring Harnesses W04 and W05](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: Check [F16 - Main Fuse for Cab Wiring Circuit](#) and see [Wiring Diagram "H" - Engine/Cab Wiring Harness](#) .

(2) Check voltage at fuse F22 input of cab fuse box, located in the post on right-hand side

Action:

Location: [XF17 to XF22 - Connectors for Cab Fuses \(F17 to F22\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or break in wire between connector X12 and fuse F22.

(3) Check voltage at fuse F22 output of cab fuse box, located in the post on right-hand side

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for failed fuse F22. Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at white/red wire terminal 7 of 8-pin connector XA60/1 (grey)

Action:

Location: [XA60 - 2/8-Pin Connector for Radio A60](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check for corroded connections or break in white/red wire between fuse F22 and radio A60.

(5) Check voltage at terminal 30 of relay K11

Action:

Location: [XK11 - 5-Pin Connector for Relay of Fan Motor \(Tractors with Cab\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded connections or break in red wire between 2-pin connector X12 and relay K11.

(6) Check voltage at terminal 87 of relay K11

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 10](#)

NO: [GO TO 7](#)

(7) Check voltage at terminal 86 of relay K11

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 9](#)

NO: [GO TO 8](#)

(8) Check voltage at terminal 2 of 2-pin connector X13

Action:

Location: [X13 - 2-Pin Interconnection between Wiring Harnesses W04 and W05 \(Air-Conditioning System\)](#)

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or break in orange wire. [GO TO 9](#)

NO: Test main wiring and repair if necessary. See [Wiring Diagram "A" - Main Wiring Harness](#), [Wiring Diagram "F" - Engine Wiring Harness](#) and [Wiring Diagram "H" - Engine/Cab Wiring Harness](#).

(9) Check ground connection at terminal 85 of relay K11

Action:

Check ground connection.

Result:

YES: Check for failed relay. Replace relay if it is failed. If relay is good, check for corroded or loose terminals. [GO TO 10](#)

NO: Check continuity to ground of black wire.

(10) Check voltage at fuse F19 input of cab fuse box, located in the post on right-hand side

Action:

Location: [XF17 to XF22 - Connectors for Cab Fuses \(F17 to F22\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 11](#)

NO: Check for corroded connections or break in wire between relay K11 and fuse F19.

(11) Check voltage at fuse F19 output of cab fuse box, located in the post on right-hand side

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 12](#)

NO: Check for failed fuse F19. Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(12) Check voltage at yellow/red wire terminal 4 of 8-pin connector XA60/1 (grey)

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 13](#)

NO: Check for corroded connections or break in yellow/red wire between fuse F19 and connector XA60/1.

(13) Check ground connection at black wire terminal 8 of 8-pin connector XA60/1 (grey)

Action:

Check ground connection.

Result:

YES: [GO TO 14](#)

NO: Check continuity to ground of black wire. If all connections are good, test the radio. Replace if it is bad.

(14) Check resistance between pin 3 and 4 of 8-pin connector XA60/2 (brown)

Action:

Location: [XA60 - 2/8-Pin Connector for Radio A60](#)

Most used loudspeakers:

4 ohm

8 ohm

→NOTE:

Observe loudspeaker for a label with specifications. Make sure that connections are not corroded.

Result:

YES: [GO TO 15](#)

NO: Check for corroded connections or break in wire between pin 3 and 4 of 8-pin connector XA60/2. If wire is good, replace loudspeaker.

(15) Check resistance between pin 5 and 6 of 8-pin connector XA60/2 (brown)

Action:

Most used loudspeakers:

4 ohm

8 ohm

→NOTE:

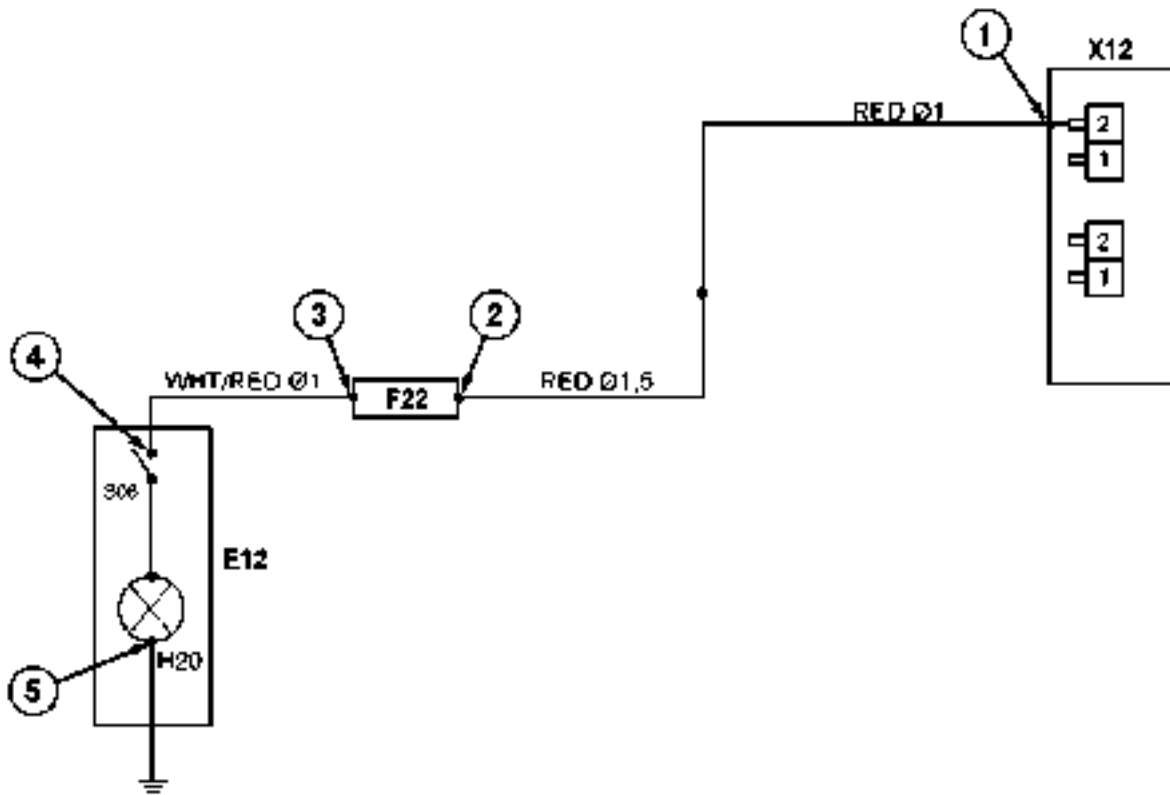
Observe loudspeaker for a label with specifications. Make sure that connections are not corroded.

Result:

YES:Check radio and replace if necessary. END OF TEST

NO:Check for corroded connections or break in wire between pin 5 and 6 of 8-pin connector XA60/2. If wire is good, replace loudspeaker.

SE09B - Dome Light E12, Diagnostic Schematic and Circuit Test



AT15808

Dome light test points (cab only)

Meet following requirements:

- Main switch in ACC or RUN position.
- Dome light on.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points.
- Meter on DC volts.

Dome Light Test (Cab Only)

(1) Check voltage at red wire terminal of 2-pin connector X12

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [F16 - Main Fuse for Cab Wiring Circuit](#) and see [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)

(2) Check voltage at fuse F22 input of cab fuse box, located in the post on right-hand side

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken red wire between 2-pin connector X12 and fuse F22.

(3) Check voltage at fuse F22 output of cab fuse box, located in the post on right-hand side

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for failed fuse F22 and replace if necessary. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at white/red wire terminal of dome light with switch E12

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken white/red wire between fuse F22 and dome light switch.

(5) Check ground connection at ground terminal of dome light

Action:

Check ground connection.

Result:

YES: Check for failed bulb and replace if necessary. END OF TEST.

NO: Check continuity to ground of black wire.

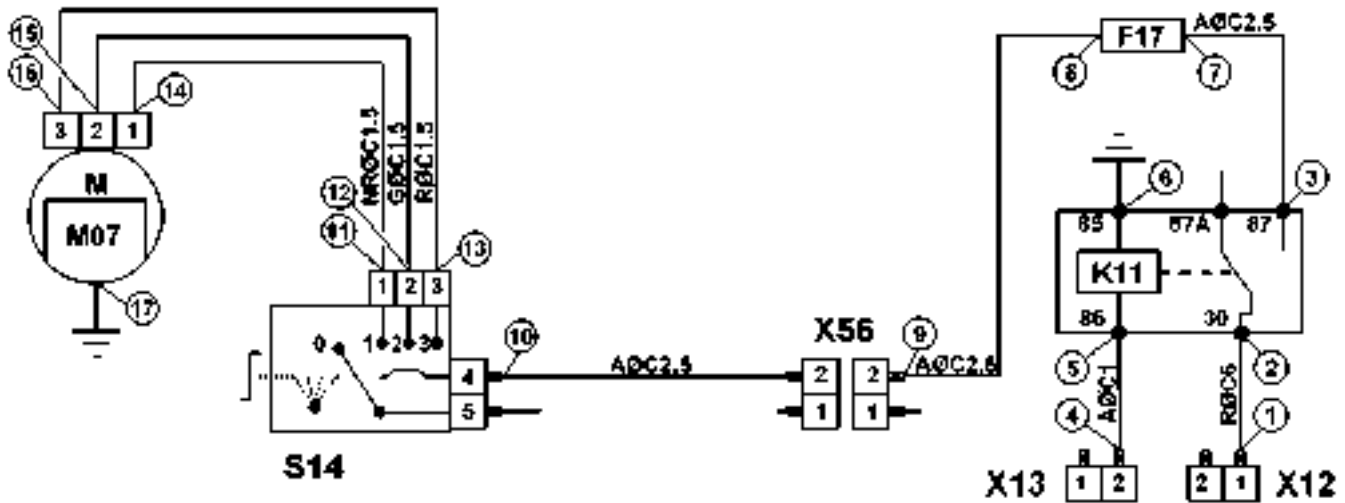
Group S10 - SE10 - Fan and Air-Conditioning System

SE10 - Fan and Air-Conditioning System (Summary of References)

[SE10A - Fan Motor M07, Diagnostic Schematic and Circuit Test](#)

[SE10B - Air-Conditioning System, Diagnostic Schematic and Circuit Test](#)

SE10A - Fan Motor M07, Diagnostic Schematic and Circuit Test



AT17262

Fan circuit test points

LEGEND:

- 1 - 16 Test points
- F17 20 amp fuse, 3-speed switch (fan/air-conditioning)
- K11 Relay of fan motor (tractors with cab)
- M07 Fan motor
- S14 Fan switch
- X12 2-pin interconnection between wiring harnesses W04 and W05
- X13 2-pin interconnection between wiring harnesses W04 and W05 (air-conditioning system)
- X56 2/1-pin interconnections between wiring harnesses W05 and W14

Meet following requirements:

- Main switch in RUN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Fan Circuit Test (Cab Only)

(1) Check voltage at red wire terminal 2 of 2-pin connector X12

Action:

Location: " [X12 - 2-Pin Interconnection between Wiring Harnesses W04 and W05](#) "

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO:See " [F16 - Main Fuse for Cab Wiring Harness](#) " and see " [Wiring Diagram "H" - Engine/Cab Wiring Harness](#) " .

(2) Check voltage at terminal 30 of relay K11

Action:

Location: " [XK11 - 5-Pin Connector for Relay of Fan Motor \(Tractors with Cab\)](#) "

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO:Check for corroded connections or broken wire between 2-pin connector X12 and relay K11.

(3) Check voltage at terminal 87 of relay K11

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 7.](#)

NO:Check for failed " [K11 - Relay of Fan Motor \(Tractors with Cab\)](#) ". Replace relay if it is failed. If relay is good, check for corroded or loose terminals and [GO TO 4.](#)

(4) Check voltage at orange wire terminal 2 of 2-pin connector X13

Action:

Location: " [X13 - 2-Pin Interconnection between Wiring Harnesses W04 and W05 \(Air-Conditioning System\)](#) "

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO:Test wiring harnesses and repair if necessary. See " [Wiring Diagram "H" - Engine/Cab Wiring Harness](#) ", " [Wiring Diagram "F" - Engine Wiring Harness](#) " and " [Wiring Diagram "A" - Main Wiring Harness](#) ".

(5) Check voltage at terminal 86 of relay K11

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6.](#)

NO:Check for corroded connections or broken orange wire between relay K11 and 2-pin connector X13.

(6) Check ground connection at black wire terminal of relay K11

Action:

Check ground connection.

Result:

YES:Check for failed " [K11 - Relay of Fan Motor \(Tractors with Cab\)](#) ". Replace relay if it is failed. If relay is good, check for corroded or loose terminals. [GO TO 7.](#)

NO:Check continuity to ground of black wire.

(7) Check voltage at fuse F17 input of cab fuse box, located in the post on right-hand side

Action:

Location: " [XF17 to XF22 - Connectors for Cab Fuses \(F17 to F22\)](#) "

Result must be same as battery voltage.

Result:

YES: [GO TO 8.](#)

NO: Check for corroded connections or broken wire between relay and fuse F17.

(8) Check voltage at fuse F17 output of cab fuse box, located in the post on right-hand side

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 9.](#)

NO: Check for failed fuse F17 (20 amp). Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(9) Check voltage at orange wire terminal 2 of 2/1-pin connector X56

Action:

Location: " [X56 - 2/1-Pin Interconnections between Wiring Harnesses W05 and W14](#) "

Result must be same as battery voltage.

Result:

YES: [GO TO 10](#)

NO: Check for corroded connections or broken orange wire between fuse F17 and 2/1-pin connector X56.

(10) Check voltage at orange wire terminal of fan switch S14

Action:

Location: " [XS14 - 5/1-Pin Connectors for Fan Switch S14](#) "

Result must be same as battery voltage.

Result:

YES: [GO TO 11.](#)

NO: Check for corroded connections or broken orange wire between 2/1-pin connector X56 and the fan switch S14.

(11) Check voltage at black/red wire terminal of fan switch S14

Action:

Location: " [XS14 - 5/1-Pin Connectors for Fan Switch S14](#) "

Result:

- No voltage if switch is in off, 2nd and 3rd position.
- Battery voltage if switch is in 1st position.

Result:

YES: [GO TO 12](#)

NO: Check " [S14 - Fan Switch](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(12) Check voltage at yellow wire terminal of fan switch S14

Action:

Result:

- No voltage if switch is in off, 1st and 3rd position.
- Battery voltage if switch is in 2nd position.

Result:

YES: [GO TO 13](#)

NO: Check " [S14 - Fan Switch](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(13) Check voltage at red wire terminal of fan switch S14

Action:

Result:

- No voltage if switch is in off, 1st and 2nd position.
- Battery voltage if switch is in 3rd position.

Result:

YES: [GO TO 14.](#)

NO: Check " [S14 - Fan Switch](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(14) Check voltage at black/red wire terminal of fan motor M07

Action:

Location: " [XM07 - 3-Pin Connectors for Fan Motor M07](#) "

Result:

- No voltage if switch is in off, 2nd and 3rd position.
- Battery voltage if switch is in 1st position.

Result:

YES: [GO TO 13.](#)

NO: Check for corroded connections or broken black/red wire between connector XM07 and connector XS14.

(15) Check voltage at yellow wire terminal of fan motor M07

Action:

Result:

- No voltage if switch is in off, 1st and 3rd position.
- Battery voltage if switch is in 2nd position.

Result:

YES: [GO TO 16](#)

NO: Check for corroded connections or broken yellow wire between connector XM07 and connector XS14.

(16) Check voltage at red wire terminal of fan motor M07

Action:

Result:

- No voltage if switch is in off, 1st and 2nd position.
- Battery voltage if switch is in 3rd position.

Result:

YES: [GO TO 17](#)

NO: Check for corroded connections or broken red wire between connector XM07 and connector XS14.

(17) Check ground connection at black wire terminal of fan motor M07

Action:

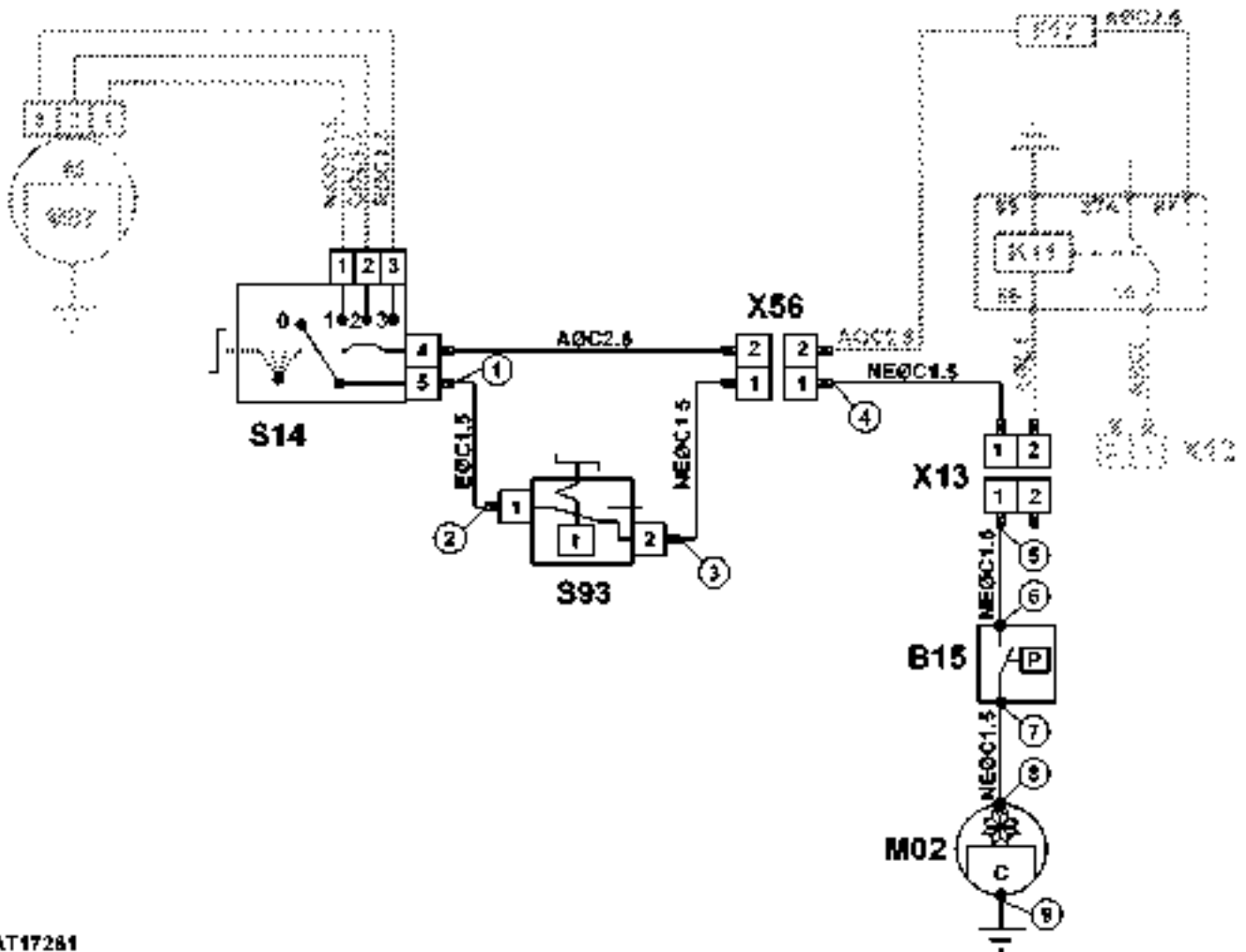
Check ground connection.

Result:

YES: Check for failed "[M07 - Fan Motor](#)" and replace if necessary. If motor is good, check for corroded or loose terminals. END OF TEST

NO: Check continuity to ground of black wire. If all connections are good, test the fan motor. Replace if is bad.

SE10B - Air-Conditioning System, Diagnostic Schematic and Circuit Test



AT17281

Air-conditioning system test points

LEGEND:

- 1 - 9 Test points
- B15 Ar-conditioning pressure switch
- K11 Relay of fan motor (tractors with cab)
- M02 Air-conditioning compressor clutch
- S14 Fan switch
- S93 Heating and air-conditioning switch
- X13 2-pin interconnection between wiring harnesses W04 and W05 (air-conditioning system)
- X56 2/1-pin interconnections between wiring harnesses W05 and W14

Meet following requirements:

- Main switch S01 in RUN position.
- Fan switch S14 in 1st, 2nd or 3rd position.
- Multimeter [JT05791A](#) positive lead on numbered test points.

- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Air-Conditioning System Test

(1) Check voltage at green wire terminal of fan switch S14

Action:

Location: " [XS14 - 5/1-Pin Connectors for Fan Switch S14](#) "

Result:

- No voltage if switch is in off position.
- Battery voltage if switch is in 1st, 2nd and 3rd position.

Result:

YES: [GO TO 2](#)

NO: Check " [S14 - Fan Switch](#) " and replace if necessary. If switch is good, see " [SE10A - Fan Motor M07, Diagnostic Schematic and Circuit Test](#) ".

(2) Check voltage at green wire terminal of heating and air-conditioning switch S93

Action:

Location: " [XS93 - 2/1-Pin Connectors for Heating and Air-Conditioning Switch S93](#) "

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or break in green wire between fan switch S14 and heating and air-conditioning switch S93.

(3) Check voltage at black/green wire terminal of heating and air-conditioning switch S93

Action:

Result:

- No voltage if switch is in heating position.
- Battery voltage if switch is in air-conditioning position.

Result:

YES: [GO TO 4](#)

NO: Check " [S93 - Heating and Air-Conditioning Switch](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(4) Check voltage at black/green wire terminal 1 of 2/1-pin connector X56

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check for corroded connections or break in black/green wire between connector X56 and heating and air-conditioning switch S93.

(5) Check voltage at black/green wire terminal 1 of 2-pin connector X13

Action:

Location: " [X13 - 2-Pin Interconnection between Wiring Harnesses W04 and W05 \(Air-Conditioning System\)](#) "

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded connections or break in black/green wire between connector X56 and connector X13.

(6) Check voltage at black/green wire at input terminal of air-conditioning pressure switch B15

Action:

Location: " [XB15 - 2-Pin Connector for Air-Conditioning Pressure Switch B15](#) "

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO:Check for corroded connections or break in black/green wire between air-conditioning pressure switch B15 and connector X13.

(7) Check voltage at black/green wire at output terminal of air-conditioning pressure switch B15

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO:Check air-conditioning system pressure. See "System Dynamic Pressure Test" in " [Air-Conditioning System Diagnosis](#) " Section 290, Group 15. If air-conditioning system pressure is good, replace " [B15 - Air-Conditioning Pressure Switch](#) ".

(8) Check voltage at black/green wire terminal of air-conditioning compressor clutch M02

Action:

Location: " [XM02 - 1-Pin Connector for Air-Conditioning Compressor Clutch M02](#) "

Result must be same as battery voltage.

Result:

YES:GO TO 15

NO:Check for corroded connections or break in black/green wire between air-conditioning pressure switch B15 and air-conditioning compressor clutch M02.

(9) Check ground connection at black wire terminal of air-conditioning compressor clutch M02

Action:

Check ground connection.

Result:

YES: Replace air-conditioning compressor if it is failed. END OF TEST.

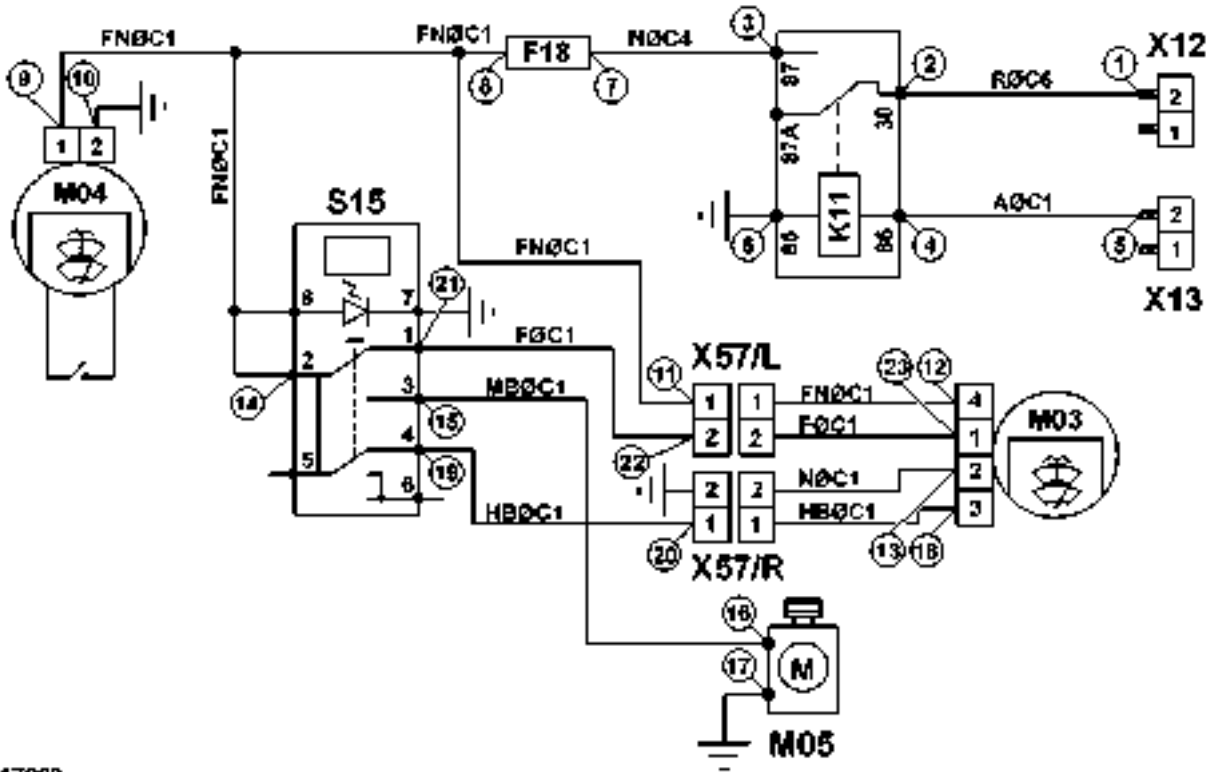
NO: Check continuity to ground of black wire.

Group S11 - SE11 - Wiper and Washer System

SE11 - Wiper and Washer System (Summary of References)

[SE11 - Wiper and Washer System, Diagnostic Schematic and Circuit Test](#)

SE11 - Wiper and Washer System, Diagnostic Schematic and Circuit Test



AT117263

Front and rear wiper/washer test points

LEGEND:

- 1 - 23 Test points
- F18 15 amp fuse, front and rear wiper and washer system
- K11 Relay of fan motor (tractors with cab)
- M03 Front wiper motor
- M04 Rear wiper motor with switch
- M05 Pump of washer system
- S15 Switch for windshield wiper and pump of washer system
- X12 2-pin interconnection between wiring harnesses W04 and W05
- X13 2-pin interconnection between wiring harnesses W04 and W05 (air-conditioning system)
- X57/L 2-pin interconnections between wiring harnesses W05 and W15
- X57/R 2-pin interconnections between wiring harnesses W05 and W15

Meet following requirements:

- Main switch in ACC or RUN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Rear Wiper and Windshield Wiper/Washer System Test

(1) Check voltage at red wire terminal 2 of 2-pin connector X12

Action:

Location: " [X12 - 2-Pin Interconnection between Wiring Harnesses W04 and W05](#) "

Result must be same as battery voltage (minimum 11.8 V direct-current).

Result:

YES: [GO TO 2](#)

NO: See " [F16 - Main Fuse for Cab Wiring Harness](#) " and see " [Wiring Diagram "H" - Engine/Cab Wiring Harness](#) "

(2) Check voltage at terminal 30 of relay K11

Action:

Location: " [XK11 - 5-Pin Connector for Relay of Fan Motor \(Tractors with Cab\)](#) "

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or break in wire between 2-pin connector X12 and relay K11.

(3) Check voltage at terminal 87 of relay K11

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: [GO TO 4](#)

(4) Check voltage at terminal 86 of relay K11

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: [GO TO 5](#)

(5) Check voltage at terminal 2 of 2-pin connector X13

Action:

Location: " [X13 - 2-Pin Interconnection between Wiring Harnesses W04 and W05 \(Air-Conditioning System\)](#) "

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or break in orange wire. [GO TO 6](#)

NO: Test main wiring and repair if necessary. See " [Wiring Diagram "H" - Engine/Cab Wiring Harness](#) ", " [Wiring Diagram "F" - Engine Wiring Harness](#) " and " [Wiring Diagram "A" - Main Wiring Harness](#) ".

(6) Check ground connection at terminal 85 of relay K11

Action:

Check ground connection.

Result:

YES: Check for failed " [K11 - Relay of Fan Motor \(Tractors with Cab\)](#) ". Replace relay if failed. If relay is good, check for corroded or loose terminals. [GO TO 7](#)

NO: Check continuity to ground of black wire.

(7) Check voltage at fuse F18 input of cab fuse box, located in the post on right-hand side

Action:

Location: " [F17 to F22 - Cab Fuse Box](#) "

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO: Check for corroded connections or break in wire between relay K11 and fuse F18.

(8) Check voltage at fuse F18 output of cab fuse box, located in the post on right-hand side

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 9](#)

NO: Check for failed fuse F18 (15 amp). Replace fuse if failed. If fuse is good, check for corroded or loose terminals.

(9) Check voltage at black/blue wire terminal of rear wiper motor with switch M04

Action:

Location: " [XM04 - 2-Pin Connector for Rear Wiper Motor with Switch M04](#) "

Result must be same as battery voltage.

Result:

YES: [GO TO 10](#)

NO: Check for corroded connections or break in black/blue wire between fuse F18 and rear wiper motor with switch M04.

(10) Check ground connection at black wire terminal of rear wiper motor with switch M04

Action:

Check ground connection.

Result:

YES:Check for failed " [M04 - Rear Wiper Motor with Switch](#) " and replace if necessary. If switch/motor is good, check for corroded or loose terminals. [GO TO 11](#)

NO:Check continuity to ground of black wire.

(11) Check voltage at blue/black wire terminal 1 of 2-pin connector X57/L

Action:

Location: " [X57/L - 2-Pin Interconnections between Wiring Harnesses W05 and W15](#) "

Result must be same as battery voltage.

Result:

YES: [GO TO 12](#)

NO:Check for corroded connections or break in blue/black wire between fuse F18 and 2-pin connector X57/L.

(12) Check voltage at blue/black wire terminal of front wiper motor M03

Action:

Location: " [XM03 - 4-Pin Connector for Front Wiper Motor M03](#) "

Result must be same as battery voltage.

Result:

YES: [GO TO 13](#)

NO:Check for corroded connections or break in blue/black wire between 2-pin connector X57/L and front wiper motor M03.

(13) Check ground connection at black wire terminal of front wiper motor M03

Action:

Check ground connection.

Result:

YES: Check for failed " [M03 - Front Wiper Motor](#) " and replace if necessary. If motor is good, [GO TO 14](#) .

NO: Check continuity to ground of black wire.

(14) Check voltage at blue/black wire terminal 2 of switch for windshield wiper and pump of washer system S15

Action:

Location: " [XS15 - 10-Pin Connector for Switch S15 of Windshield Wiper and Pump of Washer System](#) "

Result must be same as battery voltage.

Result:

YES: [GO TO 15](#)

NO: Check for corroded connections or break in blue/black wire between fuse F18 and switch S15.

(15) Check voltage at brown/white wire terminal 3 of switch S15

Action:

Result:

- No voltage if switch is in off position.
- Battery voltage if switch is in washer position.

Result:

YES: [GO TO 16](#)

NO: Check " [S15 - Switch for Windshield Wiper and Pump of Washer System](#) " and replace if necessary.

(16) Check voltage at brown/white wire terminal of washer system pump M05

Action:

Location: " [XM05 - 2-Pin Connector for Pump of Washer System M05](#) "

Result:

- No voltage if switch is in off position.
- Battery voltage if switch is in washer position.

Result:

YES: [GO TO 17](#)

NO: Check for corroded connections or break in brown/white wire between " [S15 - Switch for Windshield Wiper and Pump of Washer System](#) " and " [M05 - Pump of Washer System](#) ".

(17) Check ground connection at black wire terminal of washer system pump M05

Action:

Check ground connection.

Result:

YES: Check for failed " [M05 - Pump of Washer System](#) " and replace if necessary. If pump is good, check for corroded or loose terminals. [GO TO 18](#)

NO: Check continuity to ground of black wire.

(18) Check voltage at light blue/white wire terminal of front wiper motor M03

Action:

Result:

- No voltage if switch is in on position.
- Battery voltage if switch is in off position.

Result:

YES: Check for failed " [M03 - Front Wiper Motor](#) " and replace if necessary. If motor is good, check for corroded or loose terminals. [GO TO 21](#)

NO: [GO TO 19](#)

(19) Check voltage at blue/white wire terminal of switch S15 to front wiper motor M03

Action:

Result:

- No voltage if switch is in on position.
- Battery voltage if switch is in off position.

Result:

YES: [GO TO 20](#)

NO: Check " [S15 - Switch for Windshield Wiper and Pump of Washer System](#) " and replace if necessary.

(20) Check voltage at light blue/white wire terminal 1 of 2-pin connector X57/R

Action:

Location: " [X57/R - 2-Pin Interconnection between Wiring Harnesses W05 and W15](#) "

Result:

- No voltage if switch is in on position.
- Battery voltage if switch is in off position.

Result:

YES: Check for corroded connections or break in light blue/white wire between connector X57/R and front wiper motor M03. [GO TO 21](#)

NO: Check for corroded connections or break in light blue/white wire between connector X57/R and " [S15 - Switch for Windshield Wiper and Pump of Washer System](#) ". [GO TO 21](#)

(21) Check voltage at blue wire terminal of switch S15 to front wiper motor M03

Action:

Result:

- No voltage if switch is in on position.
- Battery voltage if switch is in off position.

Result:

YES: [GO TO 22](#)

NO: Check " [S15 - Switch for Windshield Wiper and Pump of Washer System](#) " and replace if necessary.

(22) Check voltage at blue wire terminal 2 of 2-pin connector X57/L

Action:

Location: " [X57/L - 2-Pin Interconnections between Wiring Harnesses W05 and W15](#) "

Result:

- No voltage if switch is in on position.
- Battery voltage if switch is in off position.

Result:

YES: [GO TO 23](#)

NO: Check for corroded connections or break in blue wire between switch S15 and 2-pin connector X57/L.

(23) Check voltage at blue wire terminal of front wiper motor M03

Action:

Result:

- No voltage if switch is in on position.
- Battery voltage if switch is in off position.

Result:

YES:Check for failed "[M03 - Front Wiper Motor](#)" and replace if necessary. If motor is good, check for corroded or loose terminals. END OF TEST

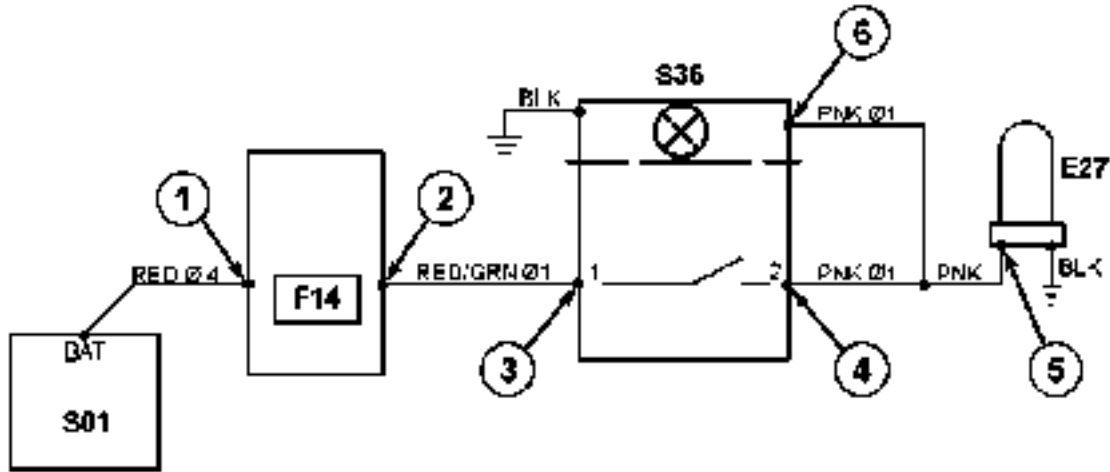
NO:Check for corroded connections or break in blue wire between connector X57/L and front wiper motor M03.

Group S13 - SE13 - Beacon Light

SE13 - Beacon Light (Summary of References)

[SE13 - Beacon Light, Diagnostic Schematic and Circuit Test](#)

SE13 - Beacon Light, Diagnostic Schematic and Circuit Test



AT15719

Beacon light test points

Meet following requirements:

- Gear shift lever in neutral position.
- PTO disengaged.
- Remove connectors from the beacon light.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points.
- Meter on DC volt

Beacon Light Test

(1) Check voltage at F14 fuse input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check for corroded connections or broken red wire between main switch and fuse box. Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at F14 fuse output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for failed fuse F19. If fuse is good, check for corroded or loose terminals.

(3) Check voltage at terminal 1 (red/green wire terminal) of beacon light switch S36

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for corroded connections or broken red/green wire between fuse box and beacon light switch S36.

(4) Check voltage at terminal 2 (pink wire terminal) of beacon light switch S36

Action:

(Beacon light switch in ON position)

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded or loose terminals. Replace beacon light switch S36.

(5) Check voltage at pink wire terminal of beacon light E27

Action:

(Beacon light switch in ON position)

Result must be same as battery voltage.

Result:

YES: [GO TO 6.](#)

NO: Check for corroded connections or broken wire between beacon light switch S36 and socket of beacon light bulb. If connections or wire are good, bulb is bad. Replace bulb of beacon light E27.

(6) Check voltage at pink wire terminal of indicator light of beacon light switch S36

Action:

(Beacon light switch in ON position)

Result must be same as battery voltage.

Result:

YES: Check ground connection. If connections or wire are good, indicator light is bad. Replace indicator light of beacon light switch. END OF TEST

NO: Check for corroded connections or broken wire between beacon light switch and indicator light of beacon light switch S36.

Group S14 - SE14 - Power Outlet

SE14 - Power Outlet (Summary of Reference)

[SE14A - 7-Pin Connector X18, Functional Schematic and Theory of Operation](#)

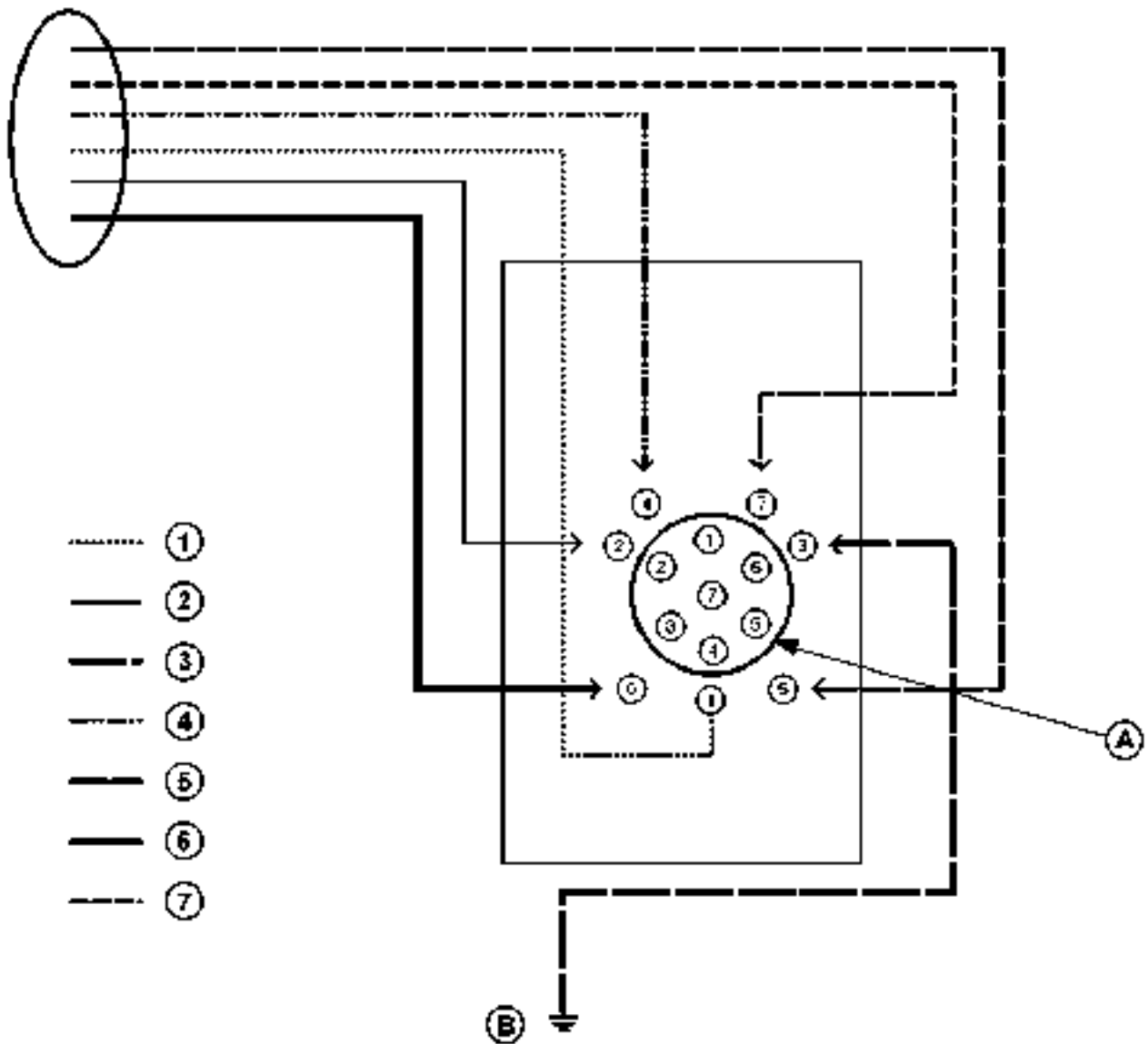
[SE14A - 7-Pin Connector X18, Diagnostic Schematic and Circuit Test](#)

[SE14B - 3-Pin Connector X17 \(Optional\), Functional Schematic and Theory of Operation](#)

[SE14B - Air Suspension Seat Compressor Motor M06, Functional Schematic and Theory of Operation](#)

[SE14B - 3-Pin Connector X17 and Air Suspension Seat Compressor Motor M06, Diagnostic Schematic and Circuit Test](#)

SE14A - 7-Pin Connector X18, Functional Schematic and Theory of Operation



AT15901

7-pin trailer connector operation

LEGEND:

- A Connector
- B Ground
- 1 Left turn circuit
- 2 Right stop light circuit
- 3 Ground circuit
- 4 Right turn circuit
- 5 Right parking light circuit
- 6 Left stop light circuit
- 7 Left parking light circuit

Function

Provides light connections for trailer.

Major Component

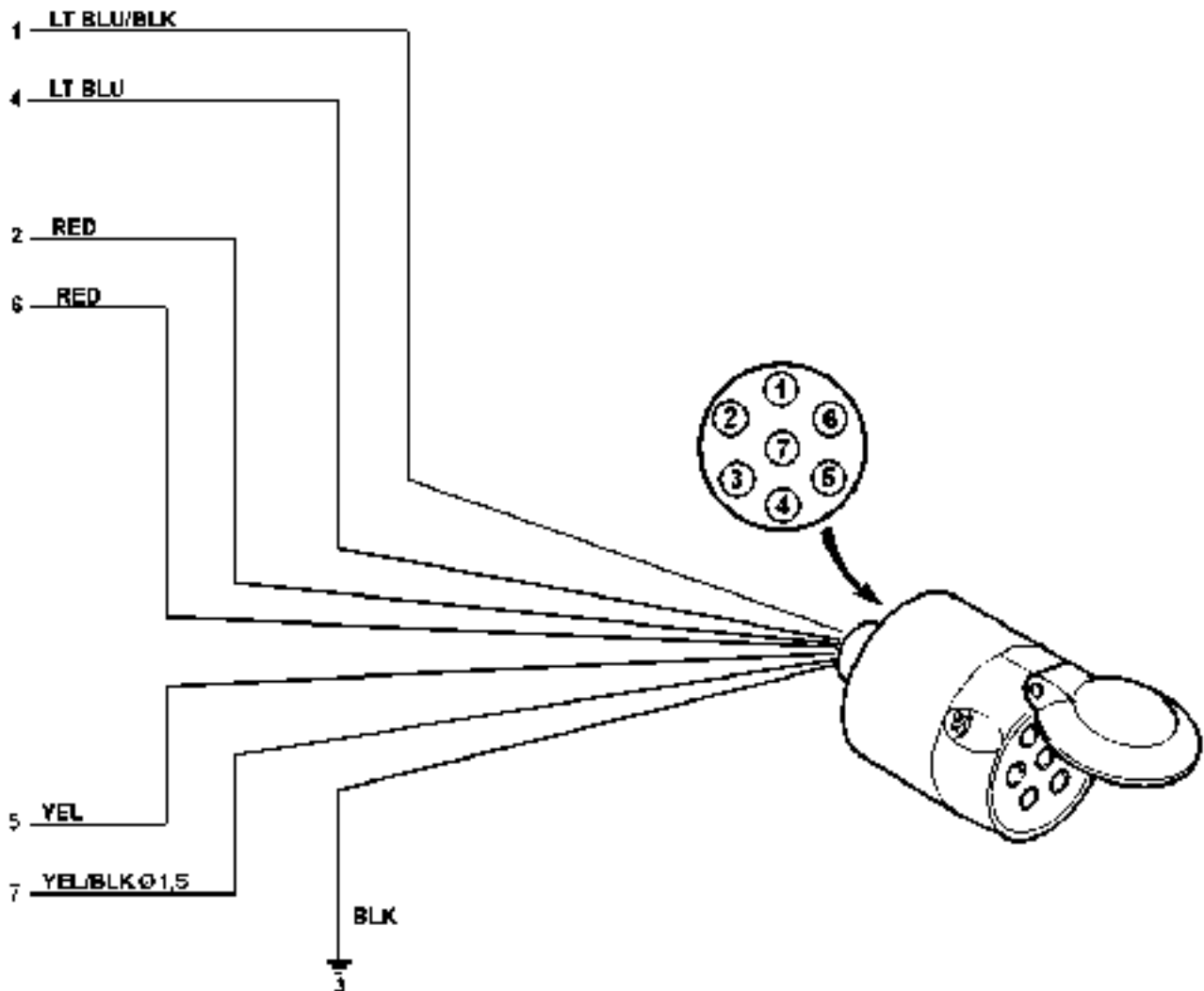
- 7-pin trailer connector

Theory of Operation

Trailer connector terminals are connected as follows:

- 1 - Left turn circuit.
- 2 - Right stop light circuit.
- 3 - Ground Circuit.
- 4 - Right turn circuit.
- 5 - Right parking light circuit and license plate light.
- 6 - Left stop light circuit.
- 7 - Left parking light circuit and license plate light.

SE14A - 7-Pin Connector X18, Diagnostic Schematic and Circuit Test



AT3748

7-pin trailer connector test points

Meet following requirements:

- Main switch in RUN (1) position.
- Gear shift lever in neutral position.
- PTO disengaged.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points.
- Meter on DC volt.

7-Pin Trailer Connector Test

(1) Check voltage at terminal 7 of trailer connector

Action:

(Light switch in position 1, 2 or 3)

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Refer to left tail light diagnosis steps 1 - 10 if further diagnosis is required. Check for corroded connections or broken wire between fuse F05 and trailer connector (yellow/black wire).

(2) Check voltage at terminal 5 of trailer connector

Action:

(Light switch in position 1, 2 or 3)

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Refer to right tail light diagnosis steps 1 - 10 if further diagnosis is required. Check for corroded connections or broken wire between fuse F06 and trailer connector (yellow wire).

(3) Check voltage at terminals 2 and 6 of trailer connector

Action:

(Push brake pedal and hold)

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Refer to stop light diagnosis steps 1 - 10 if further diagnosis is required.

Check for corroded connections or broken wire between fuse F11 and trailer connector (red wire).

(4) Check voltage at terminal 1 of trailer connector

Action:

(Release brake pedal)

(Turn/warn signal light switch moved to left turn position)

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Refer to turn signal light diagnosis steps 1 - 15 if further diagnosis is required.

Check for corroded connections or broken wire between turn/warn signal light switch and trailer connector (light blue/black wire).

(5) Check voltage at terminal 4 of trailer connector

Action:

(Turn/warn signal light switch moved to right turn position)

Result must be same as battery voltage.

Result:

YES: [GO TO 6.](#)

NO: Refer to turn signal light diagnosis steps 1 - 15 (23 point too) if further diagnosis is required.

Check for corroded connections or broken wire between turn/warn signal light switch and trailer connector (light blue wire).

(6) Check resistance at terminal 4 of trailer connector

Action:

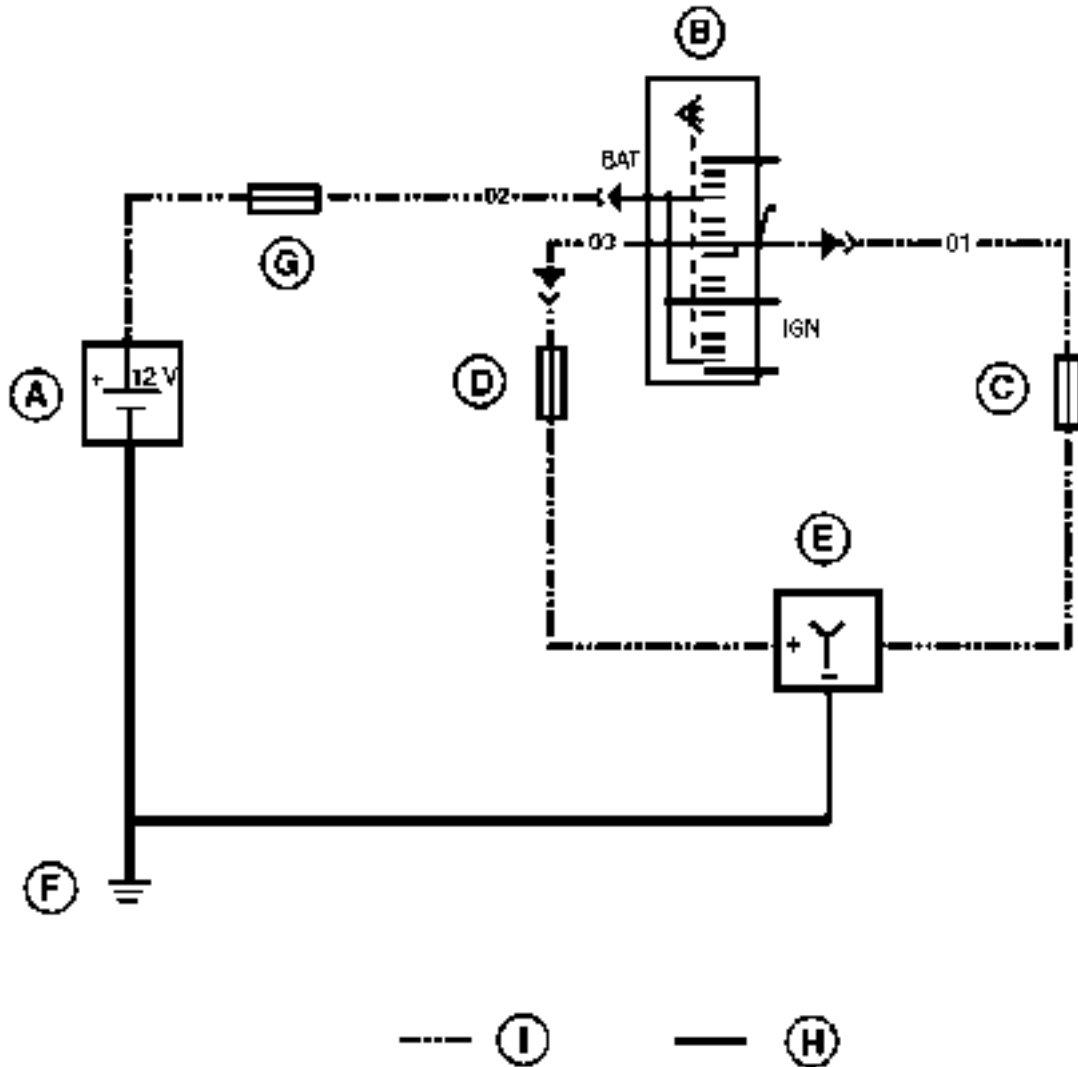
(Meter on 1 ohm scale)

Resistance must be maximum 0.5 ohm.

Result:

NO: Check for corroded connections or broken wire between trailer connector terminal 3 and connector mounting hardware.

SE14B - 3-Pin Connector X17 (Optional), Functional Schematic and Theory of Operation



3-pin optional connector operation

LEGEND:

- A Battery G01
- B Main switch S01
- C Fuse F14, 7.5 amp
- D Fuse F13, 25 amp
- E 3-pin connector X17
- F Ground
- G Main fuse F00, 50 amp
- H Ground circuit
- I Power circuit

Function

Provides light connections for trailer.

Major Components

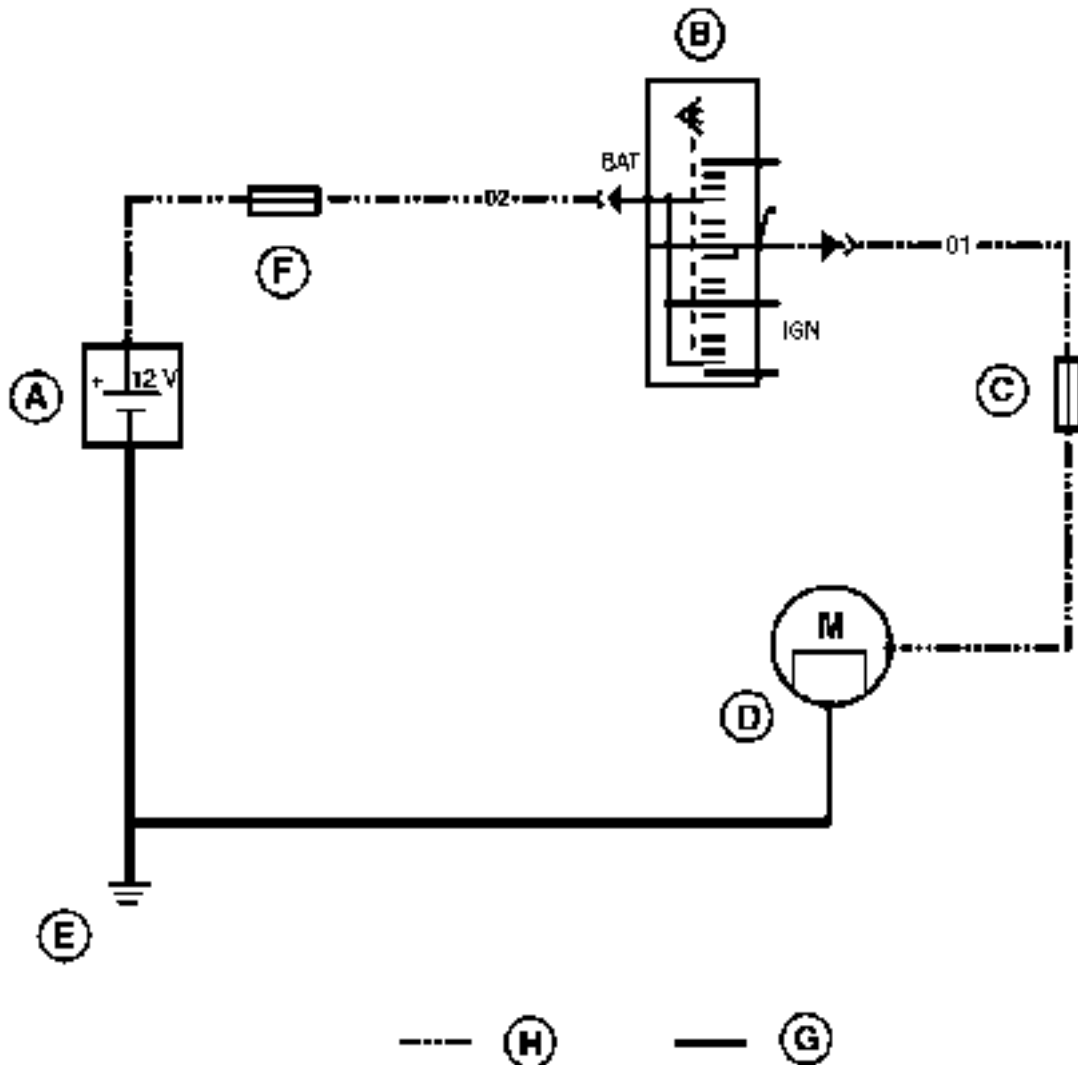
- 3-pin connector X17
- Fuse F14, 7.5 amp
- Fuse F13, 25 amp
- Main fuse F00, 50 amp
- Main switch S01

Theory of Operation

Current flows from battery G01 (A), through main fuse F00 (G) across closed contact of main switch S01 (B) and into circuit 01. Flow continues through 7.5 amp fuse F14 (C) to 3-pin connector X17 (E).

3-pin connector X17 also receives current directly from battery G01. In circuit 03 current flows from main switch S01 through 25 amp fuse F13 (D) to 3-pin connector X17.

SE14B - Air Suspension Seat Compressor Motor M06, Functional Schematic and Theory of Operation



AT3156

Pneumatic seat

LEGEND:

- A Battery G01
- B Main switch S01
- C Fuse F14, 7.5 amp
- D Air suspension seat compressor motor M06
- E Ground
- F Main fuse F00, 50 amp
- G Ground circuit
- H Power circuit

Function

Adjusting of operator's seat position (optional seat).

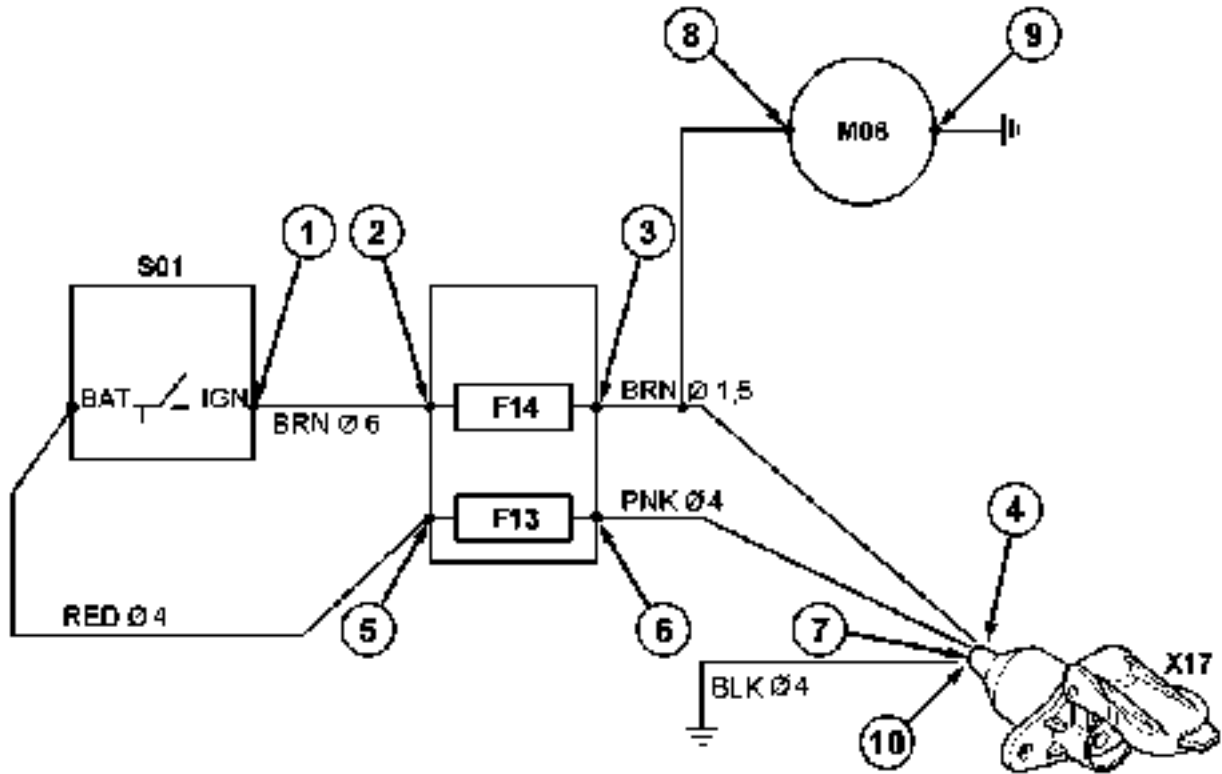
Major Components

- Air suspension seat compressor motor M06
- Fuse F14, 7.5 amp
- Main fuse F00, 50 amp
- Main switch S01

Theory of Operation

Current flows from battery G01 (A), through main fuse F00 (F) across closed contact of main switch S01 (B) and into circuit 01. Flow continues through 7.5 amp fuse F14 (C) to air suspension seat compressor motor M06 (D).

SE14B - 3-Pin Connector X17 and Air Suspension Seat Compressor Motor M06, Diagnostic Schematic and Circuit Test



AT15718

3-pin connector and pneumatic seat motor test points

Meet following requirements:

- Main switch in run position.
- Gear shift lever in neutral position.
- PTO disengaged.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points.
- Meter on DC volt

3-Pin Connector and Pneumatic Seat Motor Test

(1) Check voltage at "IGN" and "ACC" terminals of main switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#).

(2) Check voltage at fuse F14 input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or break in orange wire between main switch and fuse box.

(3) Check voltage at fuse F14 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for failed fuse F14. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at brown wire terminal of 3-pin connector X17

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check for corroded connections or break in brown wire between fuse box and 3-pin connector X17.

(5) Check voltage at fuse F13 input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded connections or break in brown wire between main switch S01 and fuse box.

(6) Check voltage at fuse F13 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: Check for failed fuse F13. If fuse is good, check for corroded or loose terminals.

(7) Check voltage at pink wire terminal of 3-pin connector X17

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO: Check for corroded connections or break in pink wire between fuse box and 3-pin connector X17.

(8) Check resistance at black wire terminal of 3-pin connector X17

Action:

(Meter on 1 ohm scale)

Resistance must be maximum 0.5 ohm.

Result:

YES: [GO TO 9](#)

NO: Check for corroded connections or break in wire between 3-pin connector terminal and connector mounting hardware.

(9) Check voltage at brown wire terminal of air suspension seat compressor motor M06

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 10](#)

NO: Check for corroded connections or break in brown wire between fuse box and air suspension seat compressor motor M06.

(10) Check resistance at black wire terminal of air suspension seat compressor motor M06

Action:

(Meter on 1 ohm scale)

Resistance must be maximum 0.5 ohm.

Result:

NO:Check for corroded connections or break in wire between air suspension seat compressor motor M06 terminal and seat mounting hardware.

Group S15A - SE15A - Electronic Hitch Sensing (EHS)

SE15A - Electronic Hitch Sensing (EHS) (Summary of References)

[SE15A - Electronic Hitch Sensing \(EHS\), Functional Schematic](#)

[SE15A - Power Supply of EHS System, Diagnostic Schematic and Circuit Test](#)

[SE15A - Position Sensor B200 \(EHS\), Diagnostic Schematic and Circuit Test](#)

[SE15A - Draft Sensor B201 \(EHS\), Diagnostic Schematic and Circuit Test](#)

[SE15A - Hitch Remote Control Switch S68 \(EHS\), Diagnostic Schematic and Circuit Test](#)

[SE15A - Raise Limiting Switch S200 \(EHS\), Diagnostic Schematic and Circuit Test](#)

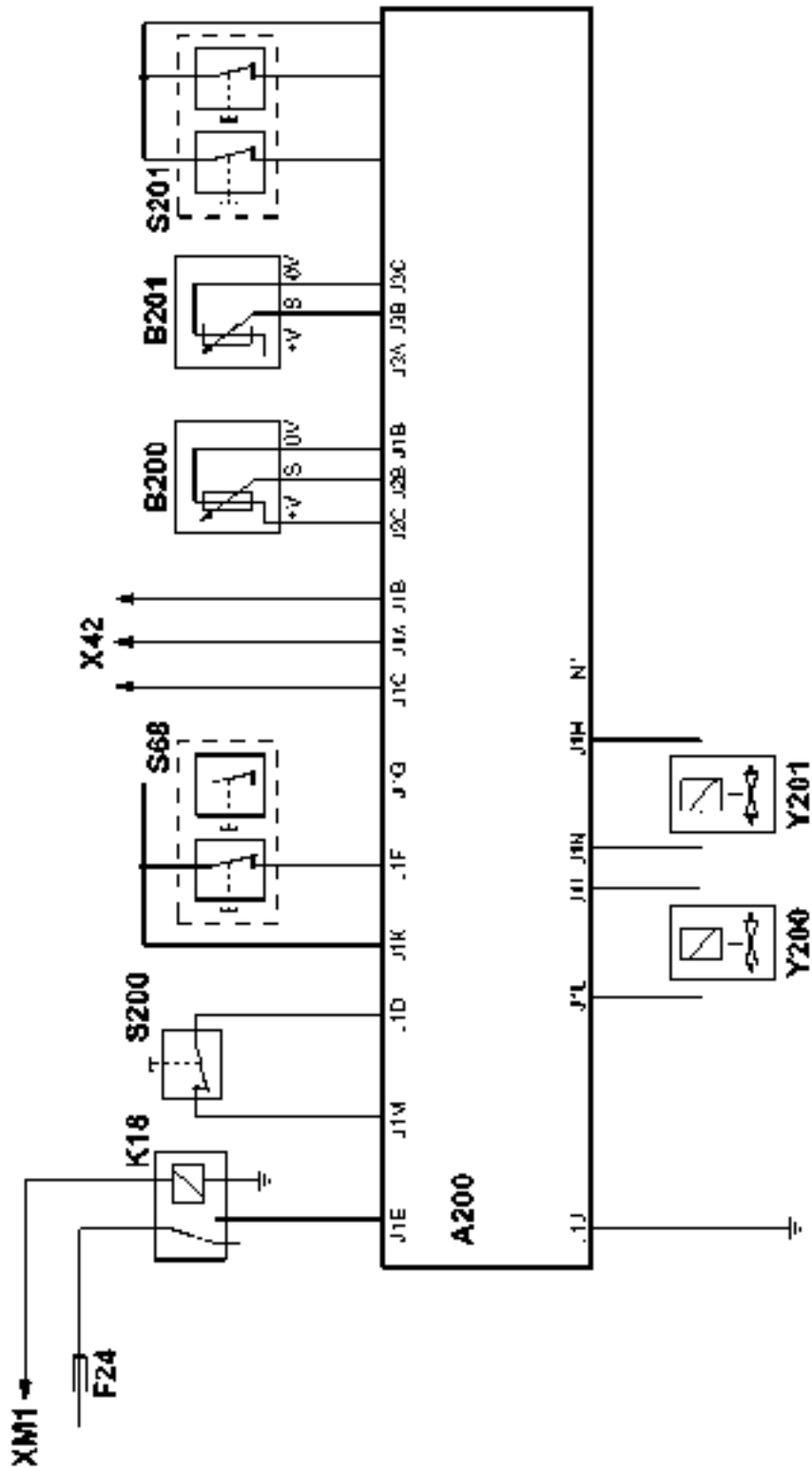
[SE15A - Raise/Lower Switch S201 \(EHS\), Diagnostic Schematic and Circuit Test](#)

[SE15A - 3-Pin Connector X42 for Diagnostic \(EHS\) to PC, Diagnostic Schematic and Circuit Test](#)

[SE15A - Raise Solenoid Valve Y200 \(EHS\), Diagnostic Schematic and Circuit Test](#)

[SE15A - Lower Solenoid Valve Y201 \(EHS\), Diagnostic Schematic and Circuit Test](#)

SE15A - Electronic Hitch Sensing (EHS), Functional Schematic



AT15810

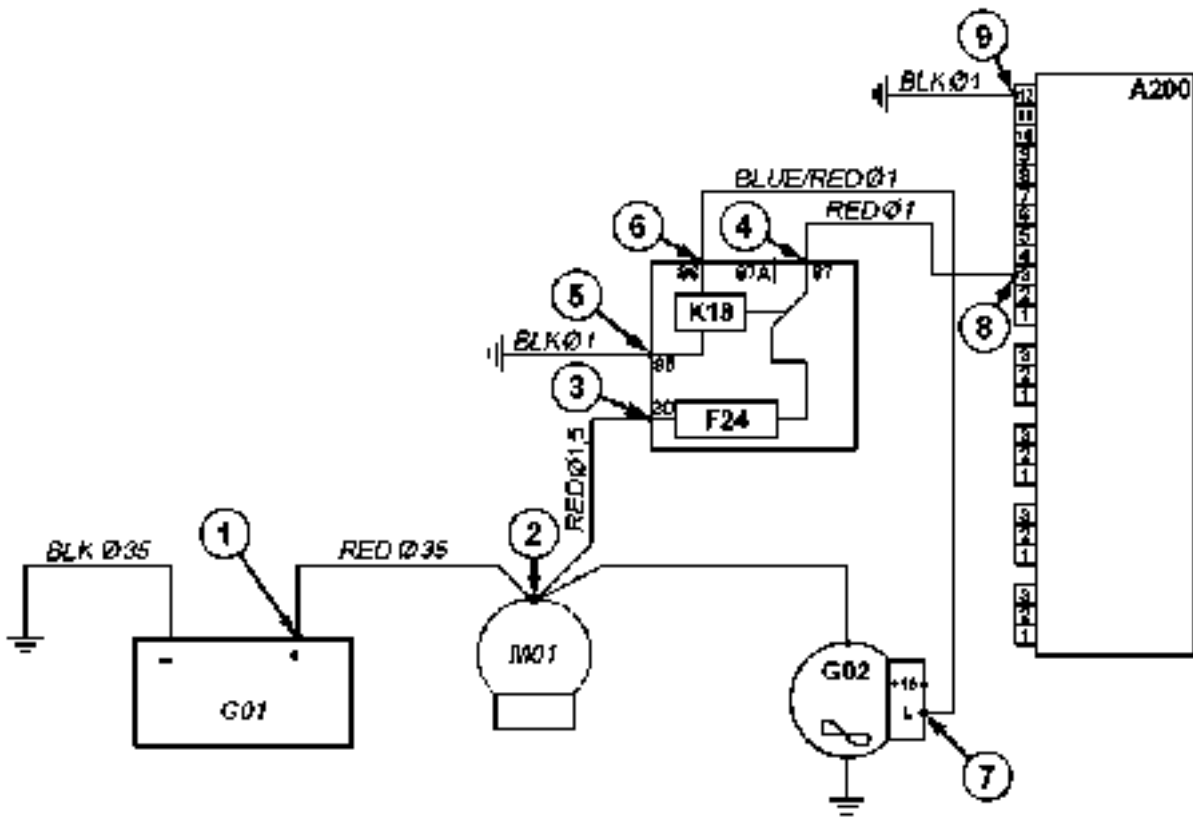
EHS control panel

LEGEND:

- A200 EHS control panel
- B200 Position sensor (EHS)
- B201 Draft sensor (EHS)
- F24 20 amp fuse for electronic hitch sensing circuit (EHS)
- J1A-J1N Connector XA200 for EHS control panel A200
- J2A-J2C 3-pin connector XB200 for position sensor B200 (EHS)

J3A-J3C	3-pin connector XB201 for draft sensor B201 (EHS)
K18	Relay of electronic hitch sensing (EHS)
S68	Hitch remote control switch (EHS)
S200	Raise limiting switch (EHS)
S201	Raise/lower switch (EHS)
X42	3-pin diagnostic connector (EHS) to PC
XM1	Connector for starter motor M01
Y200	Raise solenoid valve (EHS)
Y201	Lower solenoid valve (EHS)

SE15A - Power Supply of EHS System, Diagnostic Schematic and Circuit Test



AT15902

Power supply of EHS system

Meet following requirements:

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Check Power Supply of EHS System

(1) Check voltage at battery post

Action:

Result must be minimum 11.8 volt direct-current.

Result:

YES: [GO TO 2.](#)

NO: Test and charge battery (replace as necessary).

(2) Check voltage at starter terminal

Action:

Result must be the same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken wires between battery and main fuse.

(3) Check voltage at red wire terminal 30 of relay K18 (EHS)

Action:

Result must be the same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for corroded connections or break in red wire between starter and relay K18.

(4) Check voltage at red wire terminal 87 of relay K18 (EHS)

Action:

Start the engine.

Result must be between 13.5 and 15.5 volts.

Result:

YES: [GO TO 8](#).

NO: Check fuse F24 (EHS) and replace if necessary. If fuse is good, check for corroded or loose terminals. [GO TO 5](#).

(5) Check ground connection at black wire terminal 85 of relay K18 (EHS)

Action:

Check ground connection.

Result:

YES: [GO TO 6](#).

NO: Check ground connection on terminal 85 black wire.

(6) Check voltage at blue/red wire terminal 86 of relay K18 (EHS)

Action:

Result must be between 13.5 and 15.5 volts.

Result:

YES: Check relay K18 (EHS) and replace if necessary. If relay is good, check for corroded or loose terminals.

NO: [GO TO 7](#).

(7) Check voltage at blue/red wire terminal of alternator

Action:

Result must be between 13.5 and 15.5 volts.

Result:

YES:Check for corroded connections or break in blue/red wire between alternator and relay K18.Recondition as required and do an operational check of the system.

NO:Check [G02 - Alternator](#) .Recondition as required and do an operational check of the system.

(8) Check voltage at red wire terminal 3 of EHS control panel A200

Action:

Result must be between 13.5 and 15.5 volts.

Result:

YES: [GO TO 9](#) .

NO:Check for corroded connections or break in red wire between EHS control panel A200 and relay K18 (EHS).

(9) Check ground connection at black wire terminal 12 of EHS control panel A200

Action:

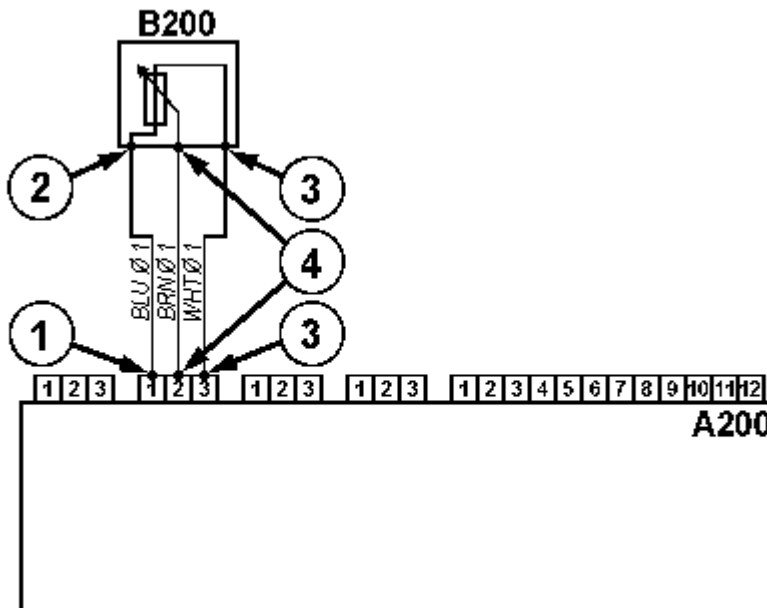
Check ground connection.

Result:

YES:END OF TEST.

NO:Check ground connection on terminal 12 black wire.

SE15A - Position Sensor B200 (EHS), Diagnostic Schematic and Circuit Test



AT15903

Schematic of position sensor B200 (EHS)

Meet following requirements:

- Gear shift lever in neutral position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Position Sensor Test

(1) Check voltage at 3-pin connector blue wire terminal 1 of EHS control panel A200

Action:

Start the engine.

Result must be 12 volts.

Result:

YES: [GO TO 2](#).

NO: Check EHS control panel A200 and replace if necessary. If control panel is good, check for corroded or loose terminals.

(2) Check voltage at blue wire terminal of position sensor B200 (EHS)

Action:

Start the engine.

Result must be 12 volts.

Result:

YES: [GO TO 3](#).

NO: Check for corroded connections or break in blue wire between EHS control panel A200 and position sensor B200 (EHS).

(3) Check continuity between terminal 3 of EHS control panel A200 and terminal 3 of position sensor connector XB200

Action:

Check continuity between terminal 3 of EHS control panel A200 and terminal 3 (white wire) of position sensor connector XB200.

Result:

YES: [GO TO 4](#).

NO: Check for corroded connections or broken white wire between EHS control panel A200 and terminal 3 of position sensor connector XB200 (EHS).

(4) Check continuity between terminal 2 of EHS control panel A200 and terminal 2 of position sensor connector XB200

Action:

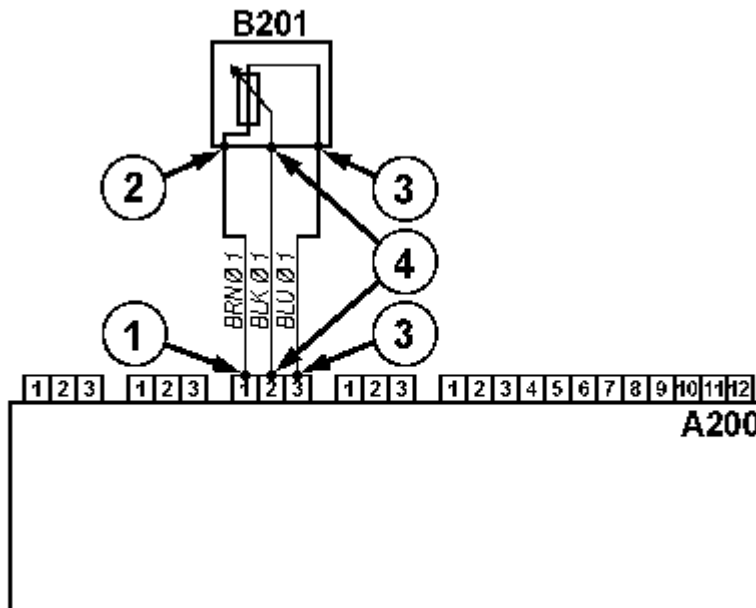
Check continuity between terminal 2 of EHS control panel A200 and brown wire terminal 2 of 3-pin connector for position sensor XB200 (EHS).

Result:

YES: Check [B200 - Position Sensor \(EHS\)](#) and replace if necessary.

NO: Check for corroded connections or broken brown wire between EHS control panel A200 and terminal 3 of position sensor connector XB200. END OF TEST.

SE15A - Draft Sensor B201 (EHS), Diagnostic Schematic and Circuit Test



AT15904

Schematic of draft sensor B201

Meet following requirements:

- Gear shift lever in neutral position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Draft Sensor Test

(1) Check voltage at 3-pin connector brown wire terminal 1 of EHS control panel A200

Action:

Start the engine.

Result must be over 12 volts.

Result:

YES: [GO TO 2](#).

NO: Check EHS control panel A200 and replace if necessary. If control panel is good, check for corroded or loose terminals.

(2) Check voltage at brown wire terminal 1 of draft sensor B201 (EHS)

Action:

Start the engine.

Result must be over 12 volts.

Result:

YES: [GO TO 3](#).

NO: Check for corroded connections or break in brown wire between EHS control panel A200 and draft sensor B201 (EHS).

(3) Check continuity between terminal 3 of EHS control panel A200 and terminal 3 of draft sensor connector XB201 (EHS)

Action:

Check continuity between terminal 3 of EHS control panel A200 and blue wire terminal 3 of 3-pin connector XB201 (EHS) for draft sensor.

Result:

YES: [GO TO 4](#).

NO: Check for corroded connections or broken blue wire between EHS control panel A200 and terminal 3 of 3-pin connector XB201 (EHS) for draft sensor.

(4) Check continuity between terminal 2 of EHS control panel A200 and terminal 2 of draft sensor connector XB201

Action:

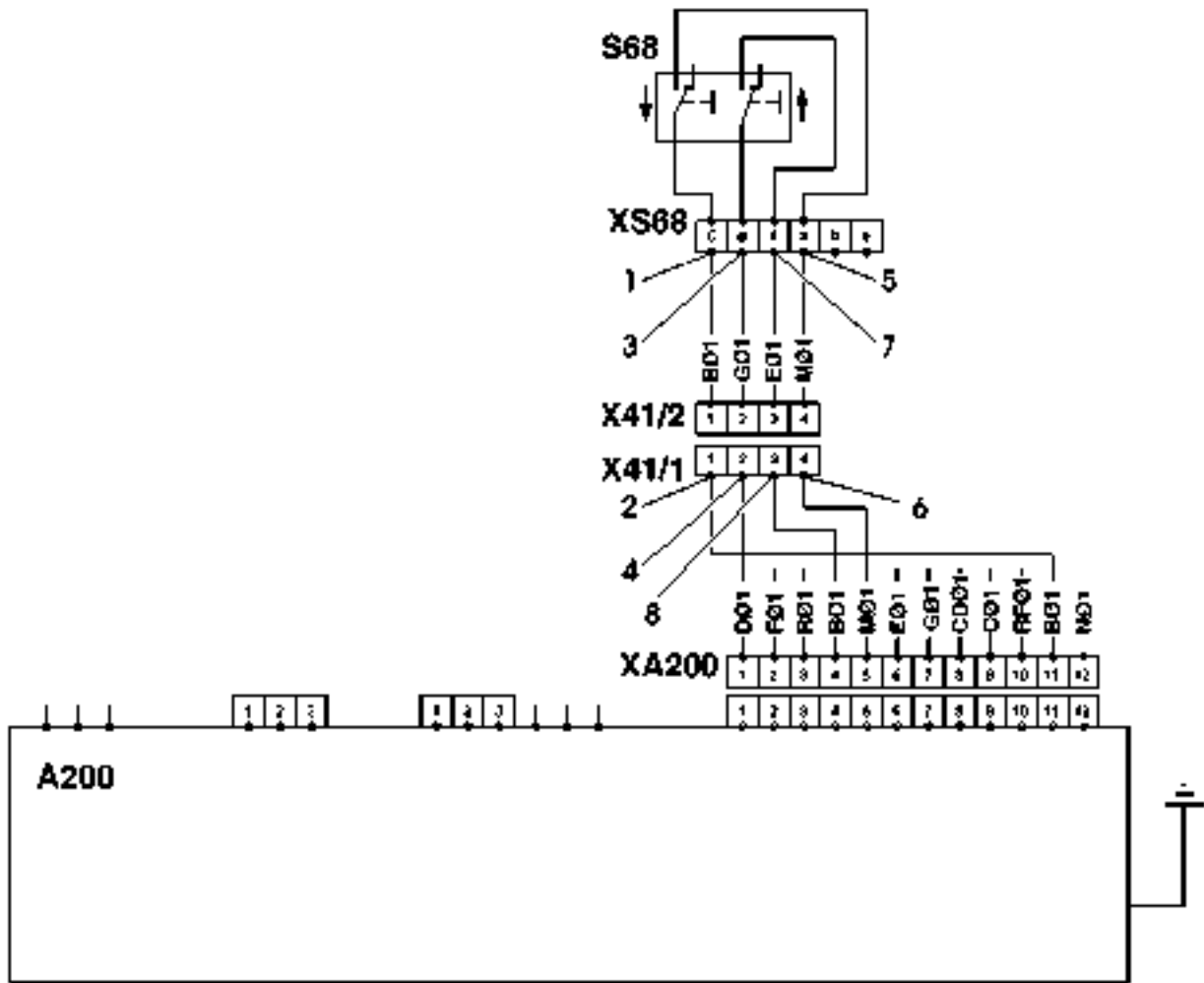
Check continuity between terminal 2 of EHS control panel A200 and black wire terminal 2 of 3-pin connector XB201 (EHS) for draft sensor.

Result:

YES: Check [B201 - Draft Sensor \(EHS\)](#).

NO: Check for corroded connections or broken black wire between EHS control panel A200 and terminal 2 of 3-pin connector XB201 (EHS) for draft sensor. END OF TEST.

SE15A - Hitch Remote Control Switch S68 (EHS), Diagnostic Schematic and Circuit Test



AT17443

Schematic of hitch remote control switch S68

LEGEND:

- A200 EHS control panel
- S68 Hitch remote control switch
- X41/1 4-pin connector on EHS wiring harness W11/1
- X41 /2 4-pin connector on adapter wiring harness W11/2 (EHS)
- XA200 12-pin connector on EHS wiring harness W11/1
- XS68 6-pin connector for hitch remote control switch S68 (EHS)

Meet following requirements:

- Gear shift lever in neutral position.
- PTO disengaged.
- Start the engine.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.

- Multimeter [JT05791A](#) in continuity or on DC volts.

Hitch Remote Control Switch Test

(1) Check voltage at white wire terminal C of 6-pin connector XS68

Action:

Location: [XS68 - 6-Pin Connector for Hitch Remote Control Switch S68 \(EHS\)](#)

Result must be over 12 volts.

Result:

YES: [GO TO 3](#)

NO: [GO TO 2](#)

(2) Check voltage at white wire terminal 1 of 4-pin connector X41/1

Action:

Location: [X41 - 4-Pin Interconnection between Wiring Harnesses W11/1 and W11/2 \(EHS\)](#)

Result must be over 12 volts.

Result:

YES: Check for corroded connections or broken wire between XS68 and X41. [GO TO 3](#)

NO: Check for corroded connections or broken wire between [XA200 - Connector for EHS Control Panel A200](#) and XS68 via X41. Perform [SE15A - Power Supply of EHS System, Diagnostic Schematic and Circuit Test](#).

(3) Check voltage at yellow wire terminal D of 6-pin connector XS68

Action:

Location: [XS68 - 6-Pin Connector for Hitch Remote Control Switch S68 \(EHS\)](#)

Result must be over 12 volts.

Result:

YES: [GO TO 5](#)

NO: [GO TO 4](#)

(4) Check voltage at grey wire terminal 2 of 4-pin connector X41/1

Action:

Location: [X41 - 4-Pin Interconnection between Wiring Harnesses W11/1 and W11/2 \(EHS\)](#)

Result must be over 12 volts.

Result:

YES:Check for corroded connections or broken wire between XS68 and X41. [GO TO 5](#)

NO:Check for corroded connections or broken wire between [XA200 - Connector for EHS Control Panel A200](#) and XS68 via X41.Perform [SE15A - Power Supply of EHS System, Diagnostic Schematic and Circuit Test](#).

(5) Check voltage at brown wire terminal A of 6-pin connector XS68

Action:

Push bottom part of switch (lower) [S68 - Hitch Remote Control Switch \(EHS\)](#).

Result must be over 12 volts.

Result:

YES: [GO TO 6](#)

NO:Check for corroded or loose terminals.Check [S68 - Hitch Remote Control Switch \(EHS\)](#) and replace if necessary.

(6) Check voltage at brown wire terminal 4 of 4-pin connector X41/1

Action:

Push bottom part of switch (lower) [S68 - Hitch Remote Control Switch \(EHS\)](#).

Result must be over 12 volts.

Result:

YES:Check for corroded connections or broken wire between [XA200 - Connector for EHS Control Panel A200](#) and X41. [GO TO 7](#)

NO:Check for corroded connections or broken wire between XS68 and X41.

(7) Check voltage at green wire terminal F of 6-pin connector XS68

Action:

Push top part of switch (raise) [S68 - Hitch Remote Control Switch \(EHS\)](#).

Result must be over 12 volts.

Result:

YES: [GO TO 8](#)

NO: Check for corroded or loose terminals. Check [S68 - Hitch Remote Control Switch \(EHS\)](#) and replace if necessary.

(8) Check voltage at green wire terminal 3 of 4-pin connector X41/1

Action:

Push top part of switch (raise) [S68 - Hitch Remote Control Switch \(EHS\)](#).

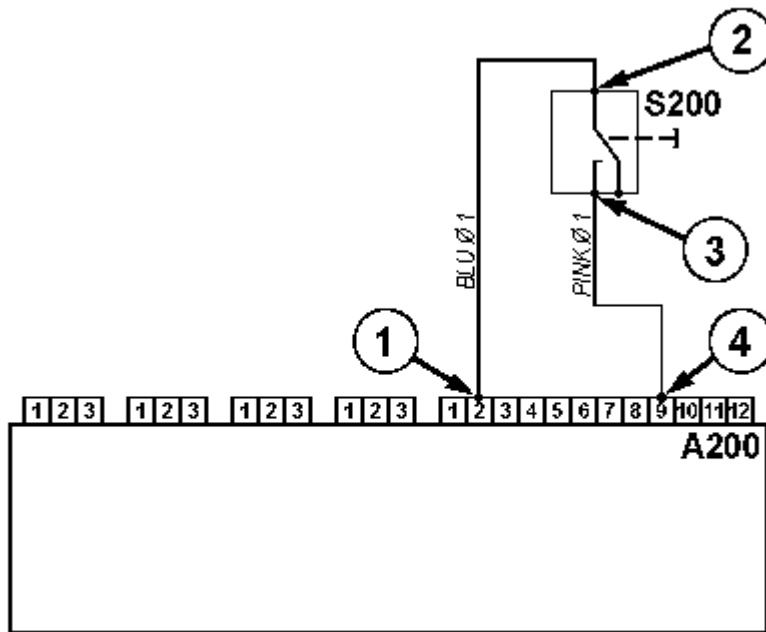
Result must be over 12 volts.

Result:

YES: Check for corroded connections or broken wire between [XA200 - Connector for EHS Control Panel A200](#) and X41. END OF TEST

NO: Check for corroded connections or broken wire between XS68 and X41.

SE15A - Raise Limiting Switch S200 (EHS), Diagnostic Schematic and Circuit Test



AT15906

Schematic of raise limiting switch S200

Meet following requirements:

- Start the engine.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Raise Limiting Switch Test

(1) Check voltage at 12-pin connector blue wire terminal 2 of EHS control panel A200

Action:

Result must be over 12 volts.

Result:

YES: [GO TO 2](#) .

NO:Check EHS control panel A200 and replace if necessary. If control panel is good, check for corroded or loose terminals.

(2) Check voltage at 2-pin connector blue wire terminal of raise limiting switch S200 (EHS)

Action:

Result must be over 12 volts.

Result:

YES: [GO TO 3](#) .

NO:Check for corroded connections or broken blue wire between EHS control panel A200 and connector of raise limiting switch XS200 (EHS).

(3) Check voltage at 2-pin connector pink wire terminal 2 of raise limiting switch S200 (EHS)

Action:

Raise Limiting Switch not actuated.

Result must be less than 0.2 volt.

Raise Limiting Switch actuated.

Result must be over 12 volts.

Result:

YES: [GO TO 4](#).

NO: Check [S200 - Raise Limiting Switch \(EHS\)](#) and replace if necessary. If switch is good, check for corroded or loose terminals.

(4) Check voltage at 12-pin connector pink wire terminal 9 of EHS control panel A200

Action:

Raise Limiting Switch not actuated.

Result must be less than 0.2 volt.

Raise Limiting Switch actuated.

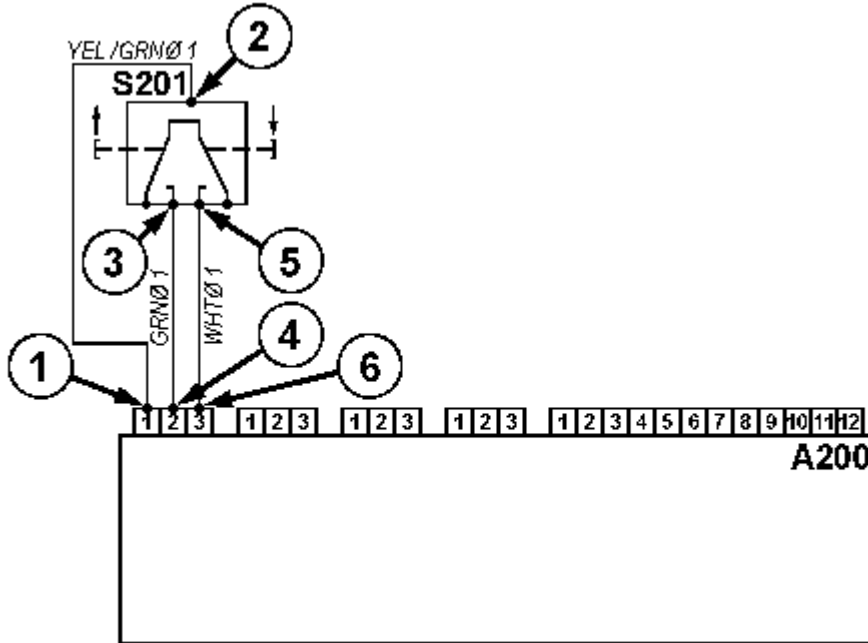
Result must be over 12 volts.

Result:

YES: END OF TEST.

NO: Check for corroded connections or broken pink wire between EHS control panel A200 and connector XS200 (EHS) of raise limiting switch.

SE15A - Raise/Lower Switch S201 (EHS), Diagnostic Schematic and Circuit Test



AT15907

Schematic raise/lower switch S201

Meet following requirements:

- Start the engine.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Raise/Lower Switch Test

(1) Check voltage at 12-pin connector yellow/green wire terminal 1 of EHS control panel A200

Action:

Result must be over 12 volts.

Result:

YES: [GO TO 2](#).

NO: Check EHS control panel A200 and replace if necessary. If control panel is good, check for corroded or loose terminals.

(2) Check voltage at 3-pin connector yellow/green wire terminal of raise/lower switch S201 (EHS)

Action:

Result must be over 12 volts.

Result:

YES: [GO TO 3](#).

NO: Check for corroded connections or broken yellow/green wire between EHS control panel A200 and connector of raise/lower switch XS201 (EHS).

(3) Check voltage at 3-pin connector green wire terminal of raise/lower switch S201 (EHS)

Action:

Push top part of the switch (raise).

Result must be over 12 volts.

Result:

YES: [GO TO 4](#).

NO: Check [S201 - Raise/Lower Switch \(EHS\)](#) and replace if necessary. If switch is good, check for corroded or loose terminals.

(4) Check voltage at 12-pin connector green wire terminal 2 of EHS control panel A200

Action:

Push top part of the switch (raise).

Result must be over 12 volts.

Result:

YES: [GO TO 5](#) .

NO: Check for corroded connections or broken green wire between EHS control panel A200 and connector of raise/lower switch XS201.

(5) Check voltage at 3-pin connector white wire terminal of raise/lower switch S201

Action:

Push bottom part of the switch (lower).

Result must be over 12 volts.

Result:

YES: [GO TO 6](#) .

NO: Check [S201 - Raise/Lower Switch \(EHS\)](#) and replace if necessary. If switch is good, check for corroded or loose terminals.

(6) Check voltage at 12-pin connector white wire terminal 3 of EHS control panel A200

Action:

Push bottom part of the switch (lower).

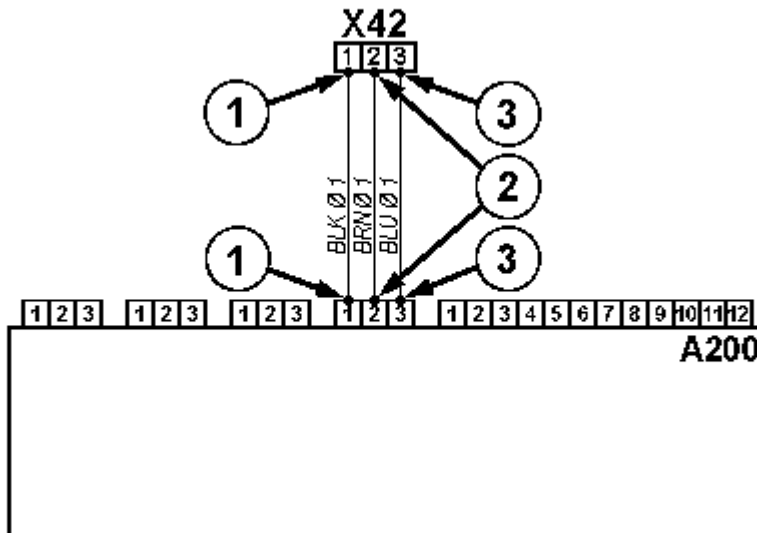
Result must be over 12 volts.

Result:

YES:Check EHS system and the hydraulic system.

NO:Check for corroded connections or broken white wire between EHS control panel A200 and connector of raise/lower switch XS201 (EHS).END OF TEST.

SE15A - 3-Pin Connector X42 for Diagnostic (EHS) to PC, Diagnostic Schematic and Circuit Test



AT15908

Schematic for diagnostic connector

Meet following requirements:

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) on continuity or on DC volts.

Wiring Harness Test

(1) Check continuity between 3-pin connector terminal 1 of EHS control panel and 3-pin connector for diagnostic X42 (EHS) terminal 1

Action:

Check continuity between 3-pin connector terminal 1 of EHS control panel A200 and 3-pin connector for diagnostic X42 black wire terminal 1.

Result:

YES: [GO TO 2](#).

NO: Check for corroded connections or broken black wire between EHS control panel A200 and 3-pin connector for diagnostic X42.

(2) Check continuity between 3-pin connector terminal 2 of EHS control panel and 3-pin connector for diagnostic X42 (EHS) terminal 2

Action:

Check continuity between 3-pin connector terminal 2 of EHS control panel A200 and 3-pin connector for diagnostic X42 (EHS) brown wire terminal 2.

Result:

YES: [GO TO 3](#).

NO: Check for corroded connections or broken brown wire between EHS control panel A200 and 3-pin connector for diagnostic X42 (EHS).

(3) Check continuity between 3-pin connector terminal 3 of EHS control panel and 3-pin connector for diagnostic X42 terminal 3

Action:

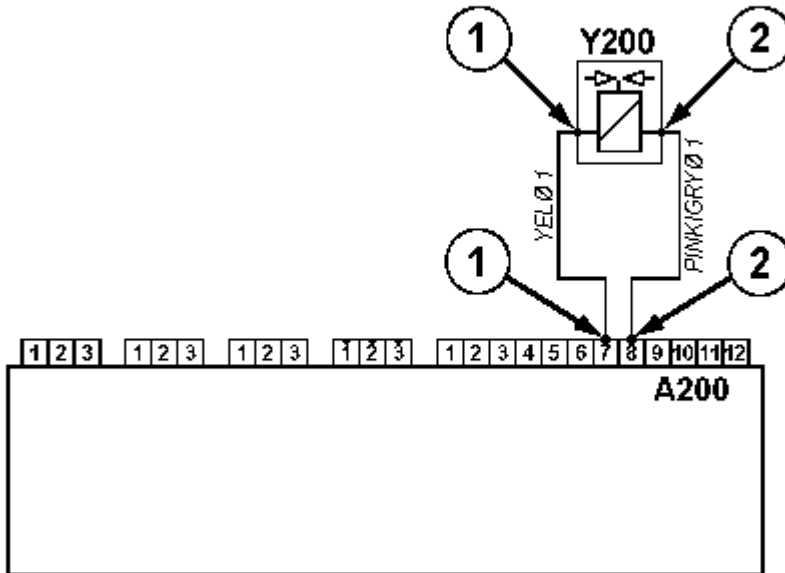
Check continuity between 3-pin connector terminal 3 of EHS control panel A200 and 3-pin connector for diagnostic X42 (EHS) blue wire terminal 3.

Result:

YES: Check diagnostic interface cable - KJD10491.

NO: Check for corroded connections or broken blue wire between EHS control panel A200 and 3-pin connector for diagnostic X42 (EHS).END OF TEST.

SE15A - Raise Solenoid Valve Y200 (EHS), Diagnostic Schematic and Circuit Test



AT17216

Schematic of raise solenoid valve

Meet following requirements:

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) on continuity or on DC volts.

Raise Solenoid Valve Test

(1) Check continuity between 12-pin connector terminal 7 for EHS control panel A200 and 2-pin connector XY200 terminal 1 for raise solenoid valve

Action:

Check continuity between 12-pin connector terminal 7 of EHS control panel A200 and yellow wire terminal 1 of 2-pin connector XY200 (EHS) for raise solenoid valve.

Result:

YES: [GO TO 2.](#)

NO: Check for corroded connections or broken yellow wire between EHS control panel A200 and 2-pin connector XY200 for raise solenoid valve.

(2) Check continuity between 12-pin connector terminal 8 for EHS control panel and 2-pin connector XY200 terminal 2 for raise solenoid valve

Action:

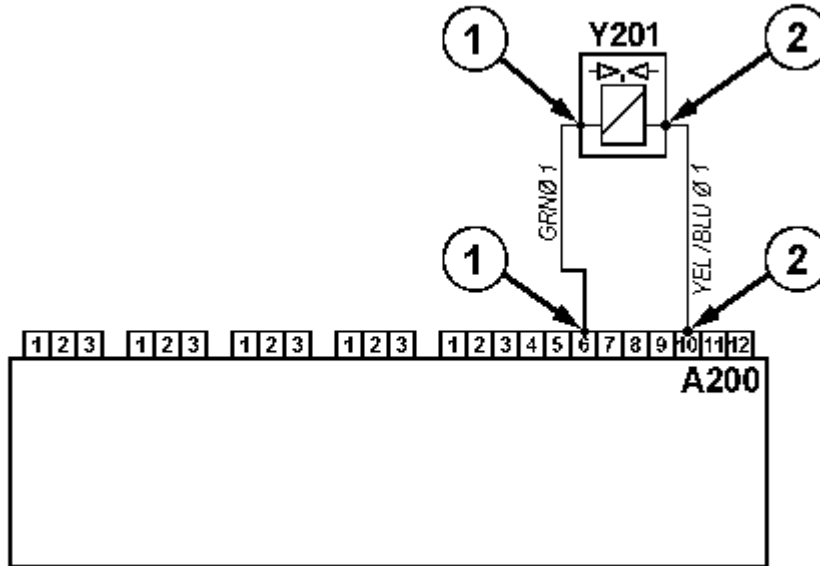
Check continuity between 12-pin connector terminal 8 of EHS control panel A200 and 2-pin connector XY200 for raise solenoid valve pink/green wire terminal 2.

Result:

YES: Check [Y200 - Raise Solenoid Valve \(EHS\).](#)

NO: Check for corroded connections or broken pink/green wire between EHS control panel A200 and 2-pin connector for raise solenoid valve XY200.END OF TEST.

SE15A - Lower Solenoid Valve Y201 (EHS), Diagnostic Schematic and Circuit Test



AT15910

Schematic of lower solenoid valve

Meet following requirements:

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) on continuity or on DC volts.

Lower Solenoid Valve Test

(1) Check continuity between 12-pin connector terminal 6 for EHS control panel A200 and 2-pin connector XY201 terminal 1 for lower solenoid valve

Action:

Check continuity between 12-pin connector terminal 6 of EHS control panel A200 and 2-pin connector XY201 for lower solenoid valve green wire terminal 1.

Result:

YES: [GO TO 2.](#)

NO: Check for corroded connections or broken green wire between EHS control panel A200 and 2-pin connector XY201 for lower solenoid valve.

(2) Check continuity between 12-pin connector terminal 10 for EHS control panel A200 and 2-pin connector XY201 terminal 2 for lower solenoid valve

Action:

Check continuity between 12-pin connector terminal 10 of EHS control panel A200 and 2-pin connector XY201 for lower solenoid valve yellow/blue wire terminal 2.

Result:

YES: Check [Y201 - Lower Solenoid Valve \(EHS\)](#).

NO: Check for corroded connections or broken yellow/blue wire between EHS control panel A200 and 2-pin connector XY201 for lower solenoid valve. END OF TEST.

Group S15B - SE15B - Electronic Hitch Sensing (EHS II)

SE15B - Electronic Hitch Sensing (EHS II) (Summary of References)

[SE15B - Electronic Hitch Sensing \(EHS II\), Functional Schematic](#)

[SE15B - Power Supply of EHS II System, Diagnostic Schematic and Circuit Test](#)

[SE15B - Position Sensor B200 II \(EHS II\), Diagnostic Schematic and Circuit Test](#)

[SE15B - Draft Sensor B201 II \(EHS II\), Diagnostic Schematic and Circuit Test](#)

[SE15B - Hitch Remote Control Switch S68 II \(EHS II\), Diagnostic Schematic and Circuit Test](#)

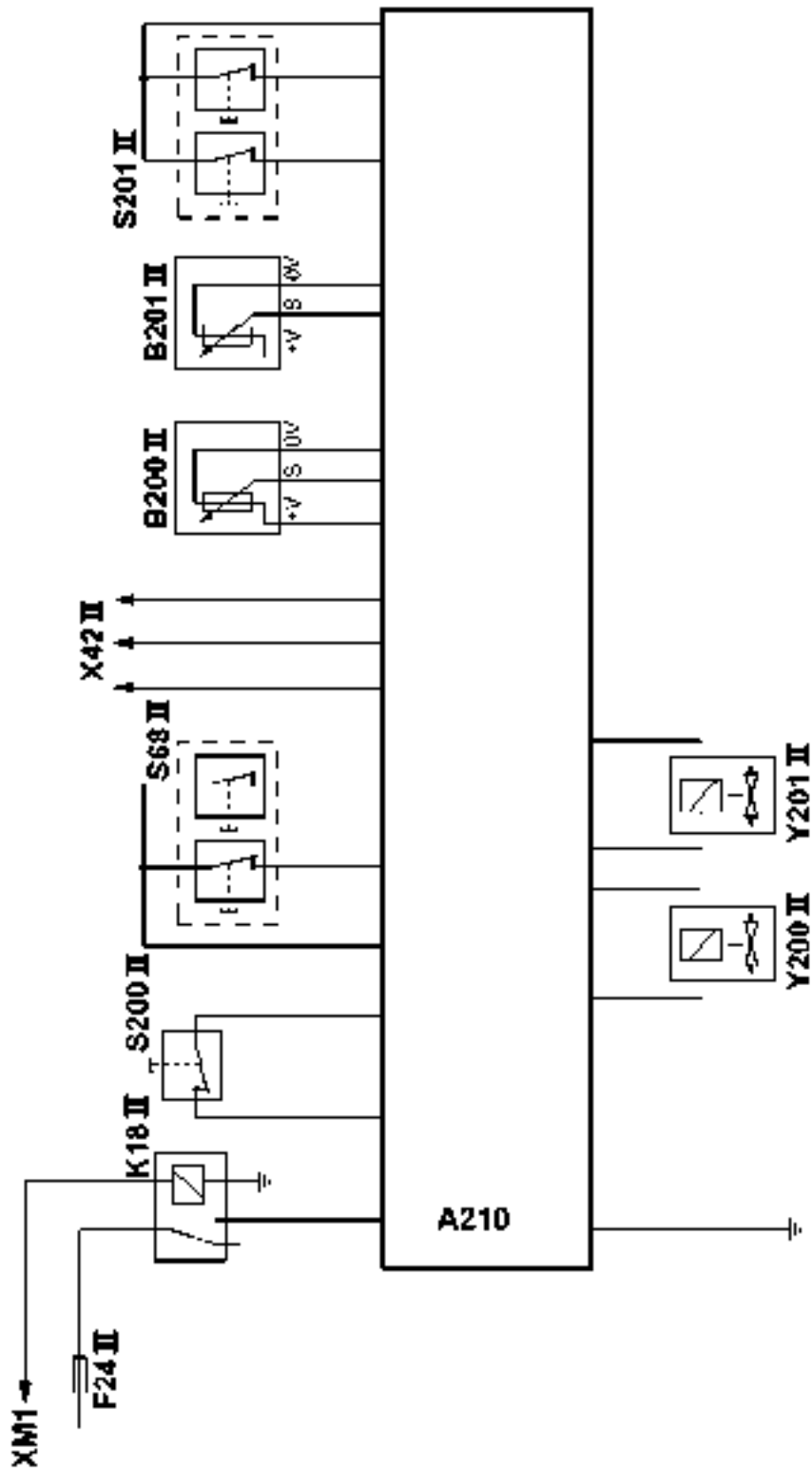
[SE15B - Raise Limiting Switch S200 II \(EHS II\), Diagnostic Schematic and Circuit Test](#)

[SE15B - Raise/Lower Switch S201 II \(EHS II\), Diagnostic Schematic and Circuit Test](#)

[SE15B - Raise Solenoid Valve Y200 II \(EHS II\), Diagnostic Schematic and Circuit Test](#)

[SE15B - Lower Solenoid Valve Y201 II \(EHS II\), Diagnostic Schematic and Circuit Test](#)

SE15B - Electronic Hitch Sensing (EHS II), Functional Schematic



AT17204

EHS II control panel

LEGEND:

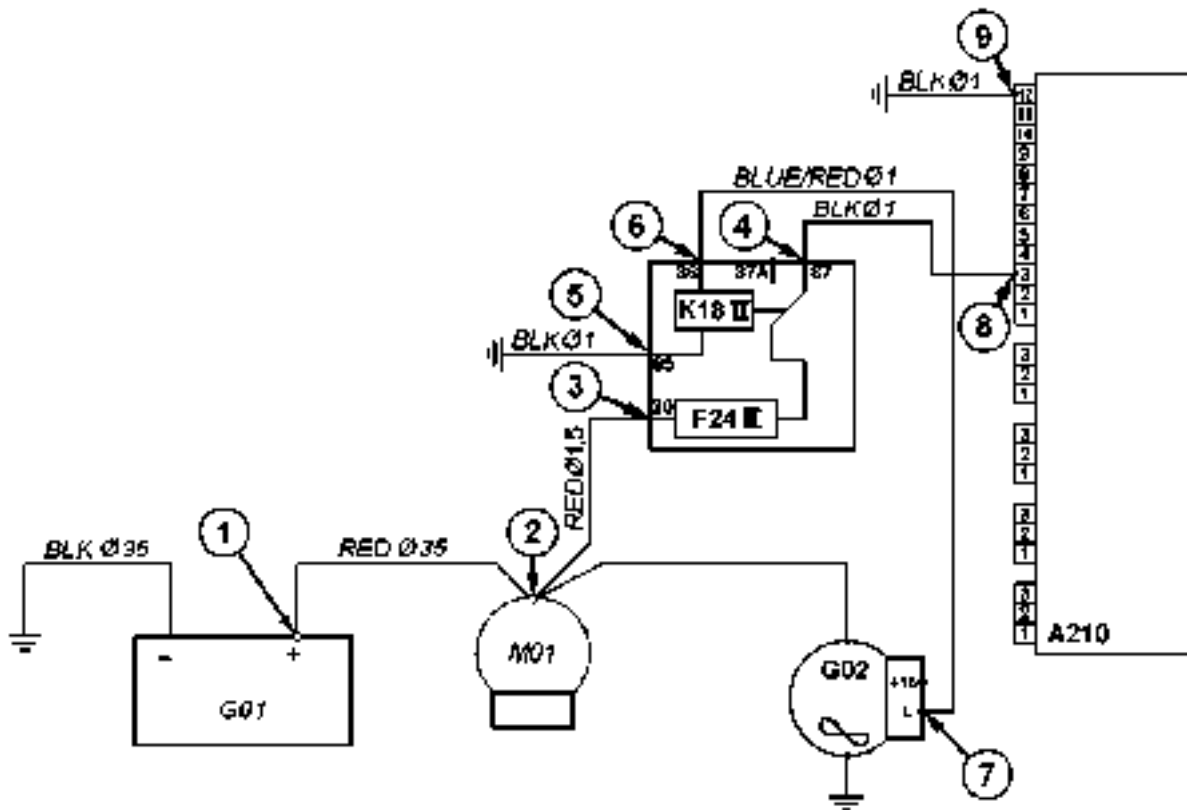
- A210 EHS II control panel
- B200 II Position sensor (EHS II)

B201 II	Draft sensor (EHS II)
F24 II	20 amp fuse for electronic hitch sensing circuit (EHS II)
G02	Alternator +15
K18 II	Relay of electronic hitch sensing (EHS II)
S68 II	Hitch remote control switch (EHS II)
S200 II	Raise limiting switch (EHS II)
S201 II	Raise/lower switch (EHS II)
X42 II	3-pin connector for diagnostic (EHS II) to PC
XM01	Connector for starter motor M01
Y200 II	Raise solenoid valve (EHS II)
Y201 II	Lower solenoid valve (EHS II)

References: Component Information - Connectors and Components

- [A210 - EHS II Control Panel](#)
- [B200 II - Position Sensor \(EHS II\)](#)
- [B201 II - Draft Sensor \(EHS II\)](#)
- [F24 II - Fuse for Electronic Hitch Sensing Circuit \(EHS II\)](#)
- [K18 II - Relay of Electronic Hitch Sensing \(EHS II\)](#)
- [S68 II - Hitch Remote Control Switch \(EHS II\)](#)
- [S200 II - Raise Limiting Switch \(EHS II\)](#)
- [S201 II - Raise/Lower Switch \(EHS II\)](#)
- [X42 II - 3-Pin Connector for Diagnostic \(EHS II\) to PC](#)
- [XM01 - Connector for Starter Motor M01](#)
- [Y200 II - Raise Solenoid Valve \(EHS II\)](#)
- [Y201 II - Lower Solenoid Valve \(EHS II\)](#)

SE15B - Power Supply of EHS II System, Diagnostic Schematic and Circuit Test



AT17427

Power Supply of EHS II System

LEGEND:

- 1 - 9 Test points
- A210 EHS II control panel
- F24 II 20 amp fuse for electronic hitch sensing circuit (EHS II)
- G01 Battery
- G02 Alternator
- K18 II Relay of electronic hitch sensing (EHS II)
- M01 Starter motor

Meet following requirements:

- Gear shift lever in neutral position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Power Supply of EHS II Test

(1) Check voltage at battery post

Action:

Result must be minimum 11.8 volt direct-current.

Result:

YES: [GO TO 2.](#)

NO: Test and charge battery (replace as necessary).

(2) Check voltage at starter terminal M01

Action:

Location: [XM01 - Connector for Starter Motor M01](#)

Result must be the same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken wires between battery and main fuse.

(3) Check voltage at red wire terminal 30 of relay K18 II

Action:

Location: [XK18 II - 4/1-Pin Connectors for Relay K18 II \(EHS II\)](#)

Result must be the same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for corroded connections or break in red wire between starter and relay K18 II.

(4) Check voltage at black wire terminal 87 of relay K18 II

Action:

Start the engine.

Result must be between 13.5 and 15.5 volts.

Result:

YES: [GO TO 8](#)

NO: Check [F24 II - 20 Amp Fuse for Electronic Hitch Sensing Circuit \(EHS II\)](#) and replace if necessary. If fuse is good, check for corroded or loose terminals. [GO TO 5](#)

(5) Check ground connection at black wire terminal 85 of relay K18 II

Action:

Check ground connection.

Result:

YES: [GO TO 6](#)

NO: Check ground connection on terminal 85 black wire.

(6) Check voltage at blue/red wire terminal 86 of relay K18 II

Action:

Result must be between 13.5 and 15.5 volts.

Result:

YES: Check relay K18 II and replace if necessary. If relay is good, check for corroded or loose terminals.

NO: [GO TO 7](#)

(7) Check voltage at blue/red wire terminal of alternator G02

Action:

Location: [G02 - Alternator](#)

Result must be between 13.5 and 15.5 volts.

Result:

YES: Check for corroded connections or break in blue/red wire between alternator and relay K18 II. Recondition as required and do an operational check of the system.

NO: Check [G02 - Alternator](#). Recondition as required and do an operational check of the system.

(8) Check voltage at black wire terminal 3 of EHS II control panel A210

Action:

Location: [XA210 - 12-Pin Interconnection between EHS II Control Panel A210 and W11 II \(EHS II\)](#)

Result must be between 13.5 and 15.5 volts.

Result:

YES: [GO TO 9](#)

NO: Check for corroded connections or broken black wire between 12-pin interconnection XA210 and relay K18 II.

(9) Check ground connection at black wire terminal 12 of EHS II control panel A210

Action:

Location: [XA210 - 12-Pin Interconnection between EHS II Control Panel A210 and W11 II \(EHS II\)](#)

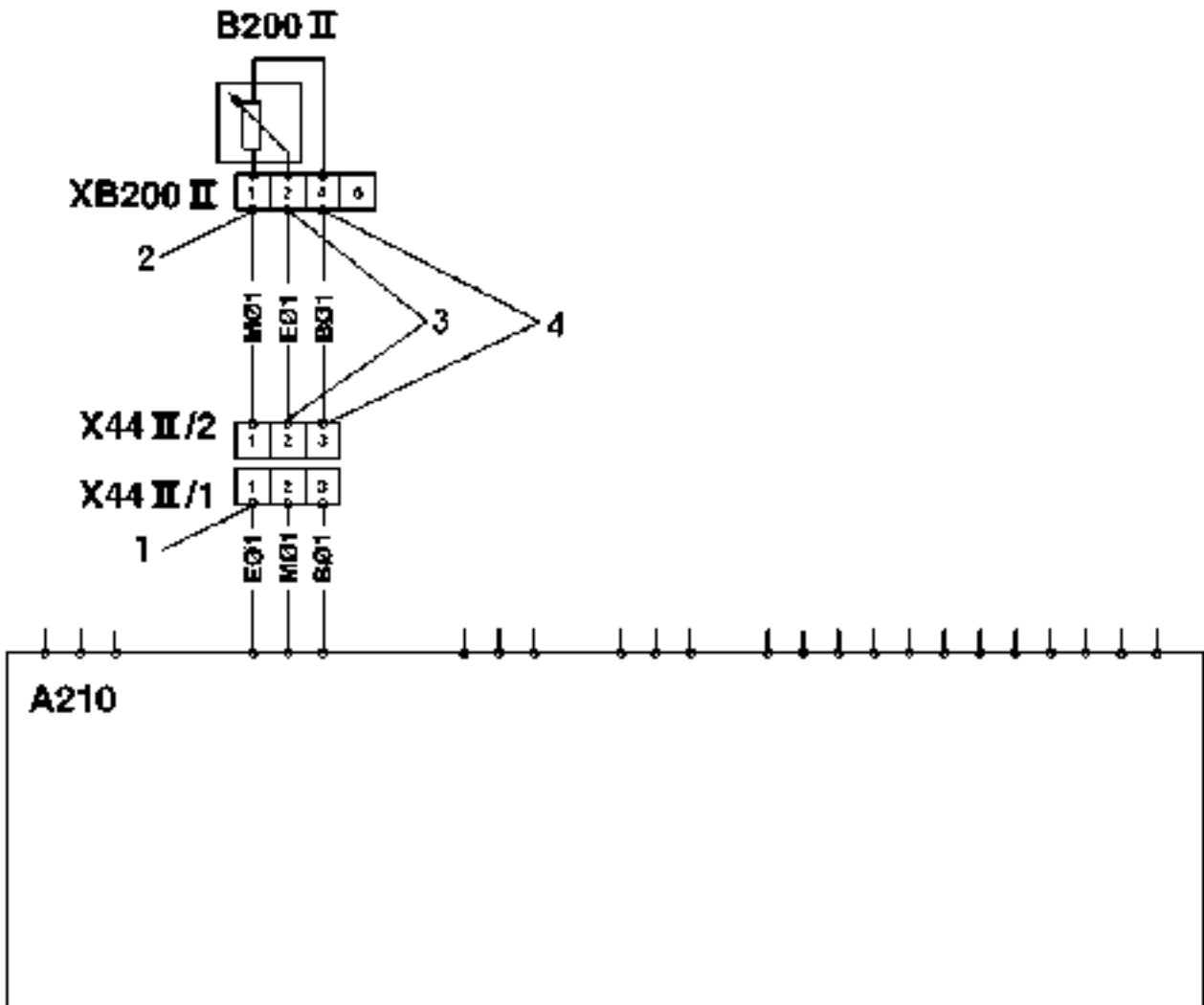
Check ground connection.

Result:

YES:END OF TEST.

NO:Check ground connection on black wire terminal 12 of 12-pin interconnection XA210.

SE15B - Position Sensor B200 II (EHS II), Diagnostic Schematic and Circuit Test



AT17428

Schematic of position sensor B200 II (EHS II)

LEGEND:

- 1 - 9 Test points
- A210 EHS II control panel
- B200 II Position sensor (EHS II)
- XB200 II 6-pin connector for position sensor B200 II (EHS II)
- X44 II/1 3-pin connector on EHS II control panel
- X44 II/2 3-pin connector on adapter wiring harness W11 II/3 (EHS II)

Meet following requirements:

- Gear shift lever in neutral position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Position Sensor Test

(1) Check voltage at green wire terminal 1 of 3-pin interconnection X44 II/1

Action:

Location: [X44 II - 3-Pin Interconnection between EHS II Control Panel A210 and Adapter Wiring Harness W11/3 \(EHS II\)](#)

Start the engine.

Result must be 12 volts.

Result:

YES: [GO TO 2](#)

NO: Check for corroded or loose terminals. Check [A210 - EHS II Control Panel](#) and replace if necessary.

(2) Check voltage at brown wire terminal 1 of position sensor B200 II

Action:

Location: [XB200 II - 6-Pin Connector for Position Sensor B200 II \(EHS II\)](#)

Start the engine.

Result must be 12 volts.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken brown wire between connectors X44 II/2 and XB200 II.

(3) Check continuity at green wire between terminal 2 of 3-pin interconnection X44 II/2 and terminal 2 of 6-pin connector XB200 II

Action:

Continuity must be present.

Result:

YES: [GO TO 4](#)

NO: Check for corroded connections or broken green wire between connectors X44 II/2 and XB200 II.

(4) Check continuity at white wire between terminal 3 of 3-pin interconnection X44 II/2 and terminal 4 of 6-pin connector XB200 II

Action:

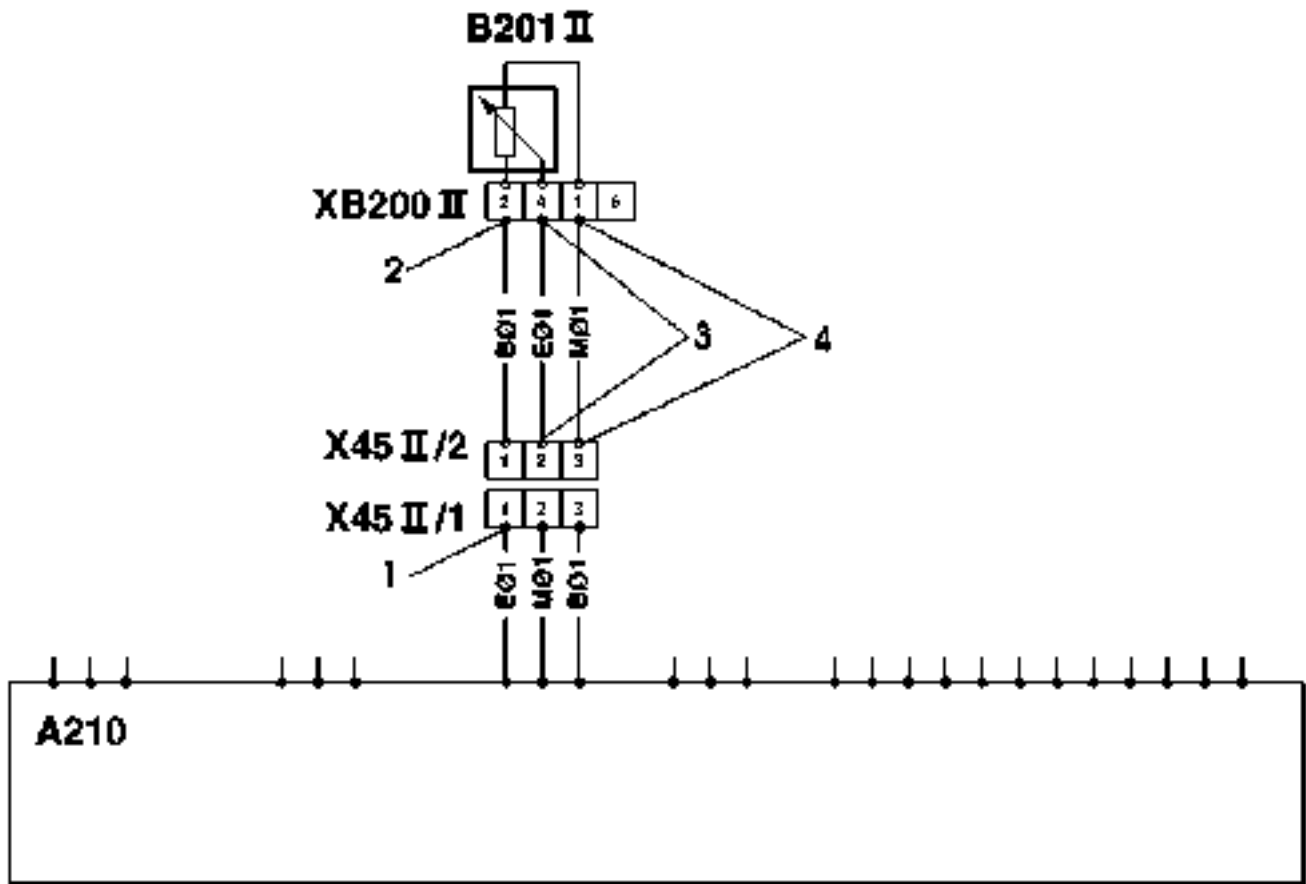
Continuity must be present.

Result:

YES: Check [B200 II - Position Sensor \(EHS II\)](#) and replace if necessary.

NO: Check for corroded connections or broken white wire between terminal 3 of 3-pin interconnection X44 II/2 and terminal 4 of 6-pin connector XB200 II. END OF TEST.

SE15B - Draft Sensor B201 II (EHS II), Diagnostic Schematic and Circuit Test



AT17429

Schematic of draft sensor B201 II (EHS II)

LEGEND:

A210	EHS II control panel
B201 II	Draft sensor (EHS II)
XB201 II	6-pin connector for draft sensor B201 II (EHS II)
X45 II/1	3-pin connector on EHS II control panel
X45 II/2	3-pin connector on adapter wiring harness W11 II/4 (EHS II)

Meet following requirements:

- Gear shift lever in neutral position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Draft Sensor Test

(1) Check voltage at green wire terminal 1 of 3-pin interconnection X45 II/1

Action:

Location: [X45 II - 3-Pin Interconnection between EHS II Control Panel A210 and Adapter Wiring Harness W11/4 \(EHS II\)](#)

Start the engine.

Result must be over 12 volts.

Result:

YES: [GO TO 2](#)

NO: Check for corroded or loose terminals. Check EHS II control panel A210 and replace if necessary.

(2) Check voltage at white wire terminal 2 of 6-pin connector XB201 II

Action:

Location: [XB201 II - 3-Pin Connector for Draft Sensor B201 II \(EHS II\)](#)

Start the engine.

Result must be over 12 volts.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken white wire between connectors X45 II/2 and XB201 II.

(3) Check continuity at green wire between terminal 2 of 3-pin interconnection X45 II/2 and terminal 4 of 6-pin connector XB201 II

Action:

Continuity must be present.

Result:

YES: [GO TO 4](#)

NO: Check for corroded connections or broken green wire between connectors X45 II/2 and XB201 II.

(4) Check continuity at brown wire between terminal 3 of 3-pin interconnection X45 II/2 and terminal 1 of 6-pin connector XB201 II

Action:

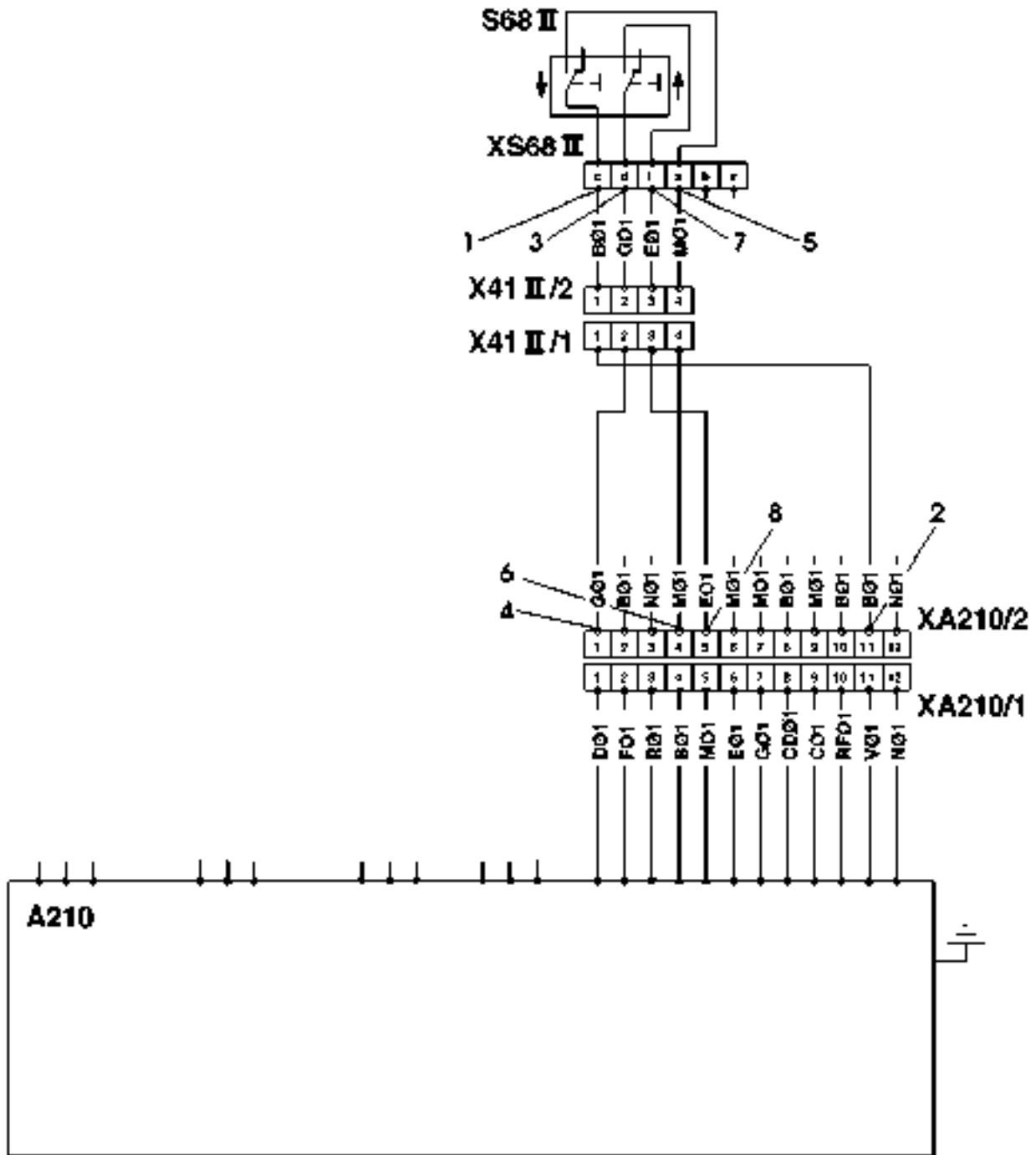
Continuity must be present.

Result:

YES: Check [XB201 II - 3-Pin Connector for Draft Sensor B201 II \(EHS II\)](#) and replace if necessary.

NO: Check for corroded connections or broken brown wire between 3-pin interconnection X45 II/2 and terminal 1 of 6-pin connector XB201 II. END OF TEST.

SE15B - Hitch Remote Control Switch S68 II (EHS II), Diagnostic Schematic and Circuit Test



AT17430

Schematic of hitch remote control switch S68 II (EHS II)

LEGEND:

- A210 EHS II control panel
- S68 II Hitch remote control switch (EHS II)
- X41 II /1 4-pin connector on EHS II wiring harness W11 II/1
- X41 II /2 4-pin connector on adapter wiring harness W11 II/2 (EHS II)
- XA210/1 12-pin connector on EHS II control panel
- XA210/2 12-pin connector on EHS II wiring harness W11 II/1

XS68 II 6-pin connector for hitch remote control switch S68 II (EHS II)

Meet following requirements:

- Gear shift lever in neutral position.
- PTO disengaged.
- Start the engine.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Hitch Remote Control Switch Test

(1) Check voltage at brown wire terminal A of 6-pin connector XS68 II

Action:

Location: [XS68 II - 6-Pin Connector for Hitch Remote Control Switch S68 II \(EHS II\)](#)

Result must be ca. 3.8 volts.

Result:

YES:GO TO 3

NO:GO TO 2

(2) Check voltage at brown wire terminal 4 of 12-pin connector XA210

Action:

Location: [XA210 - 12-Pin Interconnection between EHS II Control Panel A210 and W11 II \(EHS II\)](#)

Result must be ca. 3.8 volts.

Result:

YES:Check for corroded connections or broken brown wire between XA210 and XS68 II via [X41 II- 4-Pin Interconnection between Wiring Harnesses W11 II/1 and W11 II/2 \(EHS II\)](#).

NO:Perform [SE15B - Power Supply of EHS II System, Diagnostic Schematic and Circuit Test](#).

(3) Check voltage at green wire terminal F of 6-pin connector XS68 II

Action:

Location: [XS68 II - 6-Pin Connector for Hitch Remote Control Switch S68 II \(EHS II\)](#)

Result must be ca. 3.8 volts.

Result:

YES: [GO TO 5](#)

NO: [GO TO 4](#)

(4) Check voltage at green wire terminal 5 of 12-pin connector XA210

Action:

Location: [XA210 - 12-Pin Interconnection between EHS II Control Panel A210 and W11 II \(EHS II\)](#)

Result must be ca. 3.8 volts.

Result:

YES: Check for corroded connections or broken green wire between XA210 and XS68 II via [X41 II- 4-Pin Interconnection between Wiring Harnesses W11 II/1 and W11 II/2 \(EHS II\)](#).

NO: Perform [SE15B - Power Supply of EHS II System, Diagnostic Schematic and Circuit Test](#).

(5) Check voltage at white wire terminal C of 6-pin connector XS68 II

Action:

Push bottom part of switch (lower) [S68 II - Hitch Remote Control Switch \(EHS II\)](#).

Result must be ca. 3.8 volts.

Result:

YES: [GO TO 6](#)

NO: Check for corroded or loose terminals. Check [S68 II - Hitch Remote Control Switch \(EHS II\)](#) and replace if necessary.

(6) Check voltage at white wire terminal 11 of 12-pin connector XA210

Action:

Push bottom part of switch (lower) [S68 II - Hitch Remote Control Switch \(EHS II\)](#) .

Result must be ca. 3.8 volts.

Result:

YES: [GO TO 7](#)

NO:Check for corroded connections or broken white wire between XA210 and XS68 II via [X41 II- 4-Pin Interconnection between Wiring Harnesses W11 II/1 and W11 II/2 \(EHS II\)](#) .

(7) Check voltage at yellow wire terminal D of 6-pin connector XS68 II

Action:

Push top part of switch (raise) [S68 II - Hitch Remote Control Switch \(EHS II\)](#) .

Result must be ca. 3.8 volts.

Result:

YES: [GO TO 8](#)

NO:Check for corroded or loose terminals. Check [S68 II - Hitch Remote Control Switch \(EHS II\)](#) and replace if necessary.

(8) Check voltage at yellow wire terminal 1 of 12-pin connector XA210

Action:

Push top part of switch (raise) [S68 II - Hitch Remote Control Switch \(EHS II\)](#) .

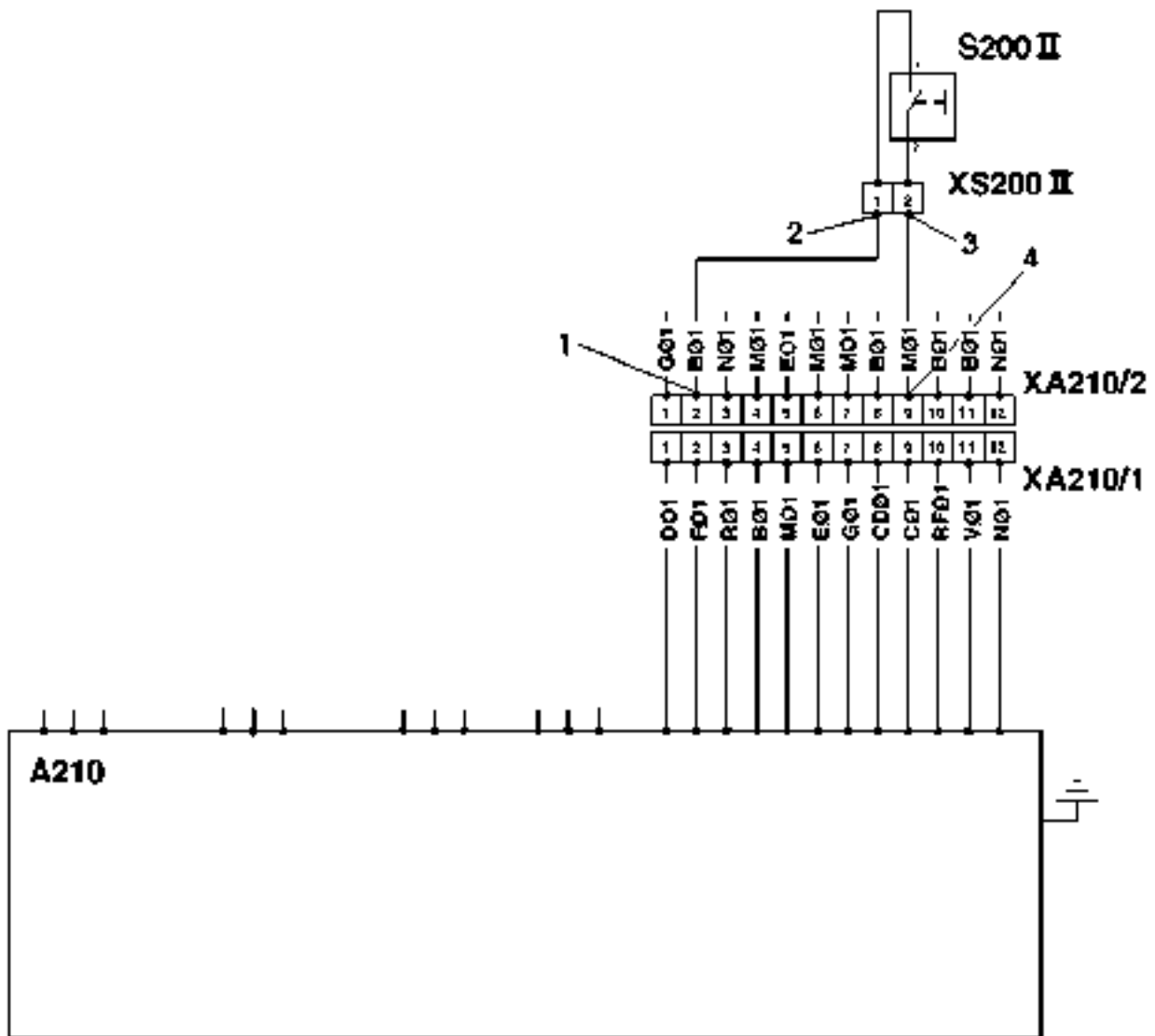
Result must be ca. 3.8 volts.

Result:

YES:END OF TEST

NO:Check for corroded connections or broken yellow wire between XA210 and XS68 II via [X41 II- 4-Pin Interconnection between Wiring Harnesses W11 II/1 and W11 II/2 \(EHS II\)](#) .

SE15B - Raise Limiting Switch S200 II (EHS II), Diagnostic Schematic and Circuit Test



AT17431

Schematic of raise limiting switch S200 II (EHS II)

LEGEND:

- A210 EHS II control panel
- S200 II Raise limiting switch (EHS II)
- XA210 12-pin connector for EHS II control panel A210
- XS200 II 2-pin connector for raise limiting switch S200 II (EHS II)

Meet following requirements:

- Gear shift lever in neutral position.
- Start the engine.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.

- Multimeter [JT05791A](#) in continuity or on DC volts.

Raise Limiting Switch Test

(1) Check voltage at white wire terminal 2 of 12-pin connector XA210/2

Action:

Location: [XA210 - 12-Pin Interconnection between EHS II Control Panel A210 and W11 II \(EHS II\)](#)

Result must be over 12 volts.

Result:

YES: [GO TO 2](#)

NO: Check for corroded or loose terminals. Perform [SE15B - Power Supply of EHS II System, Diagnostic Schematic and Circuit Test](#). Check EHS II control panel A210 and replace if necessary.

(2) Check voltage at white wire terminal 1 of 2-pin connector XS200 II

Action:

Location: [XS200 II - 2-Pin Connector for Raise Limiting Switch S200 II \(EHS II\)](#)

Result must be over 12 volts.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken white wire between XA210 and XS200 II.

(3) Check voltage at brown wire terminal 2 of 2-pin connector XS200 II

Action:

[S200 II - Raise Limiting Switch \(EHS II\)](#) not actuated.

Result must be less than 0.2 volt.

Raise Limiting Switch actuated.

Result must be over 12 volts.

Result:

YES: [GO TO 4](#)

NO: Check [S200 II - Raise Limiting Switch \(EHS II\)](#) and replace if necessary. If switch is good, check for corroded or loose terminals.

(4) Check voltage at brown wire terminal 9 of 12-pin connector XA210/2

Action:

Raise Limiting Switch not actuated.

Result must be less than 0.2 volt.

Raise Limiting Switch actuated.

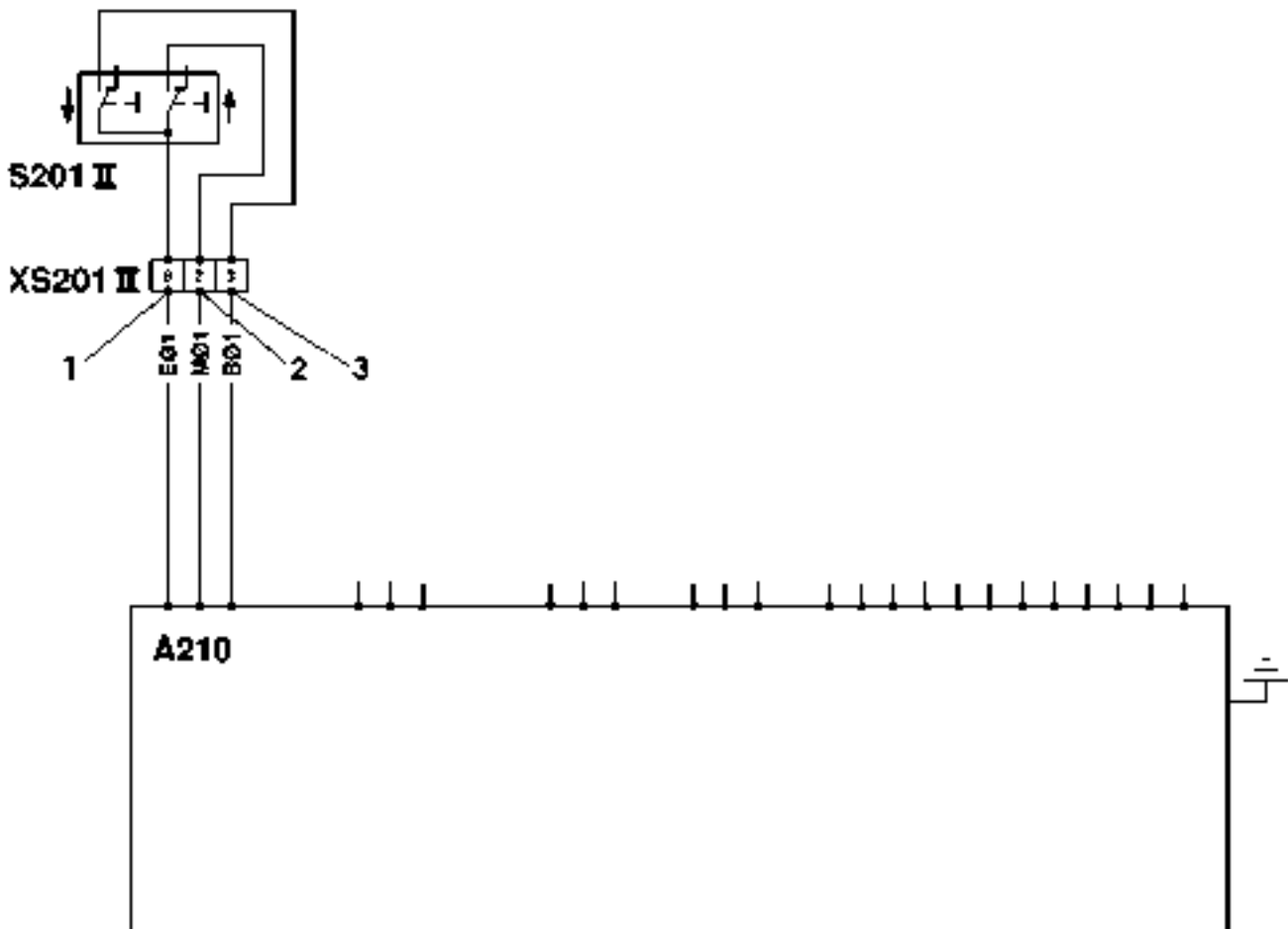
Result must be over 12 volts.

Result:

YES: END OF TEST

NO: Check for corroded connections or broken brown wire between XA210 and XS200 II.

SE15B - Raise/Lower Switch S201 II (EHS II), Diagnostic Schematic and Circuit Test



AT17432

Schematic of raise/lower switch S201 II (EHS II)

LEGEND:

- 1 - 3 Test points
- A210 EHS II control panel
- S201 II Raise/lower switch (EHS II)
- XA210 12-pin connector for EHS II control panel A210
- XS201 II 3-pin connector for raise/lower switch S201 II (EHS II)

Meet following requirements:

- Gear shift lever in neutral position.
- Start the engine.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Raise/Lower Switch Test

(1) Check voltage at green wire terminal 8 of 3-pin connector XS201 II (EHS II)

Action:

Location: [XS201 II - 3-Pin Connector for Raise/Lower Switch S201 II \(EHS II\)](#)

Result must be over 12 volts.

Result:

YES: [GO TO 2](#)

NO: Check for corroded or loose terminals. Perform [SE15B - Power Supply of EHS II System, Diagnostic Schematic and Circuit Test](#). Check EHS II control panel A210 and replace if necessary.

(2) Check voltage at brown wire terminal 2 of 3-pin connector XS201 II

Action:

Push bottom part of switch (lower) [S201 II - Raise/Lower Switch \(EHS II\)](#).

Result must be over 12 volts.

Result:

YES: [GO TO 3](#)

NO: Check [S201 II - Raise/Lower Switch \(EHS II\)](#) and replace if necessary.

(3) Check voltage at white wire terminal 3 of 3-pin connector XS201 II

Action:

Push top part of switch (raise) [S201 II - Raise/Lower Switch \(EHS II\)](#).

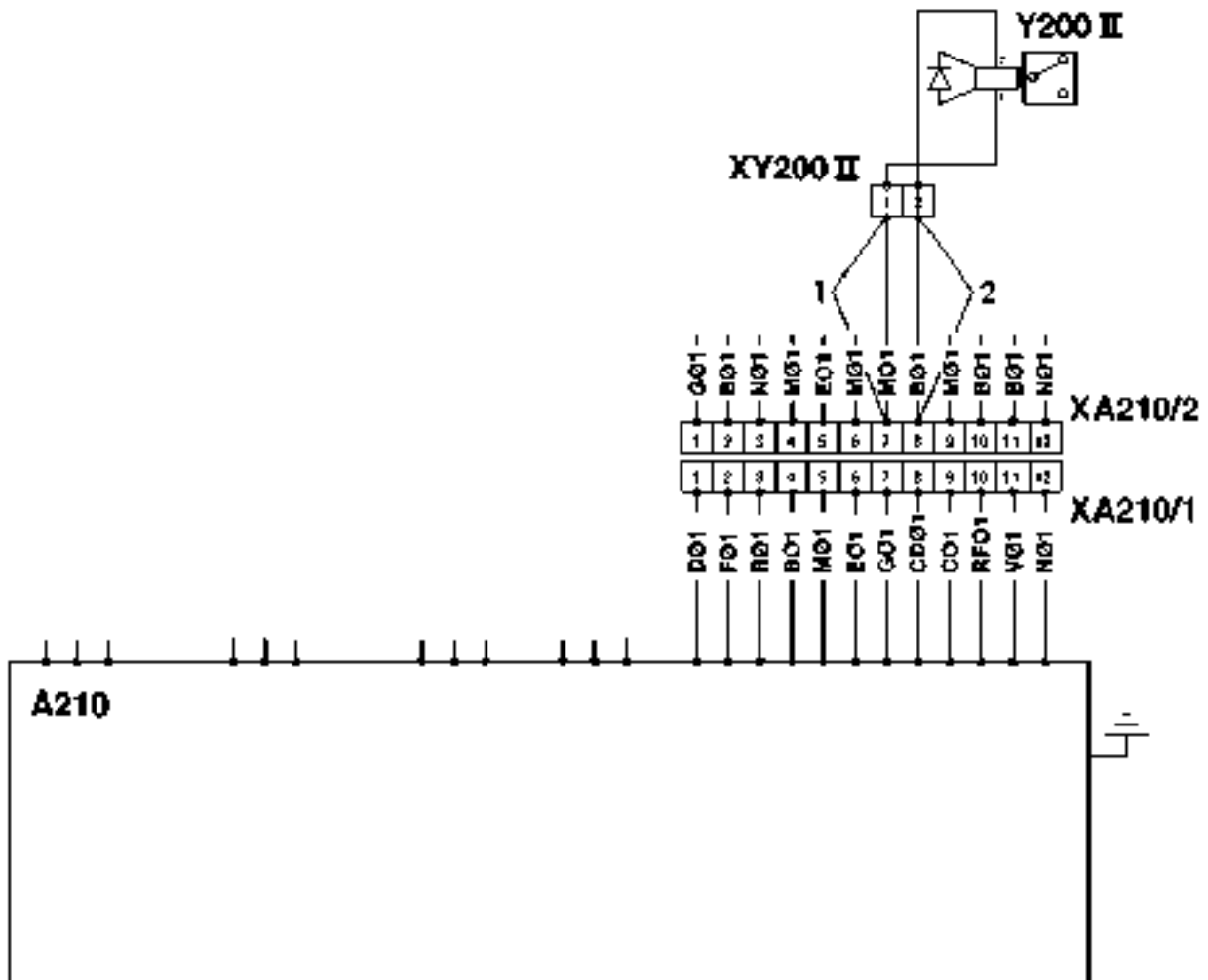
Result must be over 12 volts.

Result:

YES: END OF TEST

NO: Check [S201 II - Raise/Lower Switch \(EHS II\)](#) and replace if necessary.

SE15B - Raise Solenoid Valve Y200 II (EHS II), Diagnostic Schematic and Circuit Test



AT17434

Schematic raise solenoid valve Y200 II (EHS II)

LEGEND:

- A210 EHS II control panel
- XA210 12-pin connector for EHS II control panel A210
- XY200 II 4-pin connector for raise solenoid valve Y200 II (EHS II)
- Y200 II Raise solenoid valve (EHS II)

Meet following requirements:

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) on continuity or on DC volts.

Raise Solenoid Valve Test

(1) Check continuity at brown wire between terminal 7 of XA210/2 and terminal 1 of XY200 II

Action:

Location: [XA210 - 12-Pin Interconnection between EHS II Control Panel A210 and W11 II \(EHS II\)](#) and [XY200 II - 4-Pin Connector for Raise Solenoid Valve Y200 II \(EHS II\)](#)

Continuity must be present.

Result:

YES: [GO TO 2](#)

NO: Check for corroded connections or broken brown wire between XA210/2 and XY200 II.

(2) Check continuity at white wire between terminal 8 of XA210/2 and terminal 2 of XY200 II

Action:

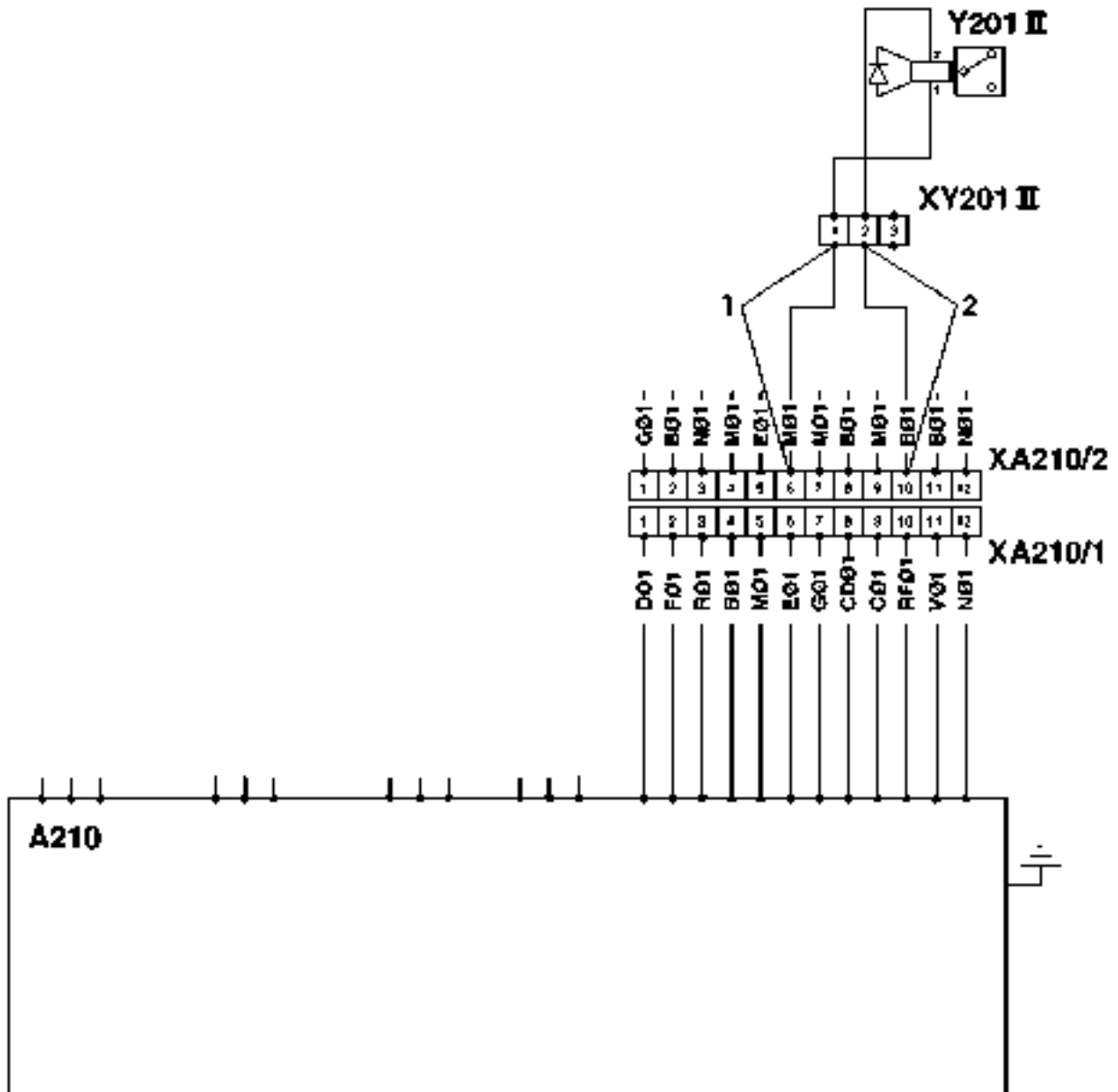
Continuity must be present.

Result:

YES: Check [XY200 II - 4-Pin Connector for Raise Solenoid Valve Y200 II \(EHS II\)](#) and replace if necessary. END OF TEST

NO: Check for corroded connections or broken white wire between XY200 II and XA210/2.

SE15B - Lower Solenoid Valve Y201 II (EHS II), Diagnostic Schematic and Circuit Test



AT17485

Schematic lower solenoid valve Y201 II (EHS II)

LEGEND:

- A210 EHS II control panel
- XA210 12-pin connector for EHS II control panel A210
- XY201 II 3-pin connector for lower solenoid valve Y201 II (EHS II)
- Y201 II Lower solenoid valve (EHS II)

Meet following requirements:

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.

- Multimeter [JT05791A](#) on continuity or on DC volts.

Lower Solenoid Valve Test

(1) Check continuity at brown wire between terminal 6 of XA210/2 and terminal 1 of XY201 II

Action:

Location: [XA210 - 12-Pin Interconnection between EHS II Control Panel A210 and W11 II \(EHS II\)](#) and [XY201 II - 3-Pin Connector for Lower Solenoid Valve Y201 II \(EHS II\)](#) .

Continuity must be present.

Result:

YES: [GO TO 2](#)

NO: Check for corroded connections or broken brown wire between XA210/2 and XY201 II.

(2) Check continuity at white wire between terminal 10 of XA210/2 and terminal 2 of XY201 II

Action:

Continuity must be present.

Result:

YES: Check [Y201 II - Lower Solenoid Valve \(EHS II\)](#) and replace if necessary. END OF TEST.

NO: Check for corroded connections or broken white wire between XY201 II and XA210/2.

Group S16A - SE16A - Hazard Warning and Turn Signal Lights

SE16A - Hazard Warning and Turn Signal Lights (Summary of References)

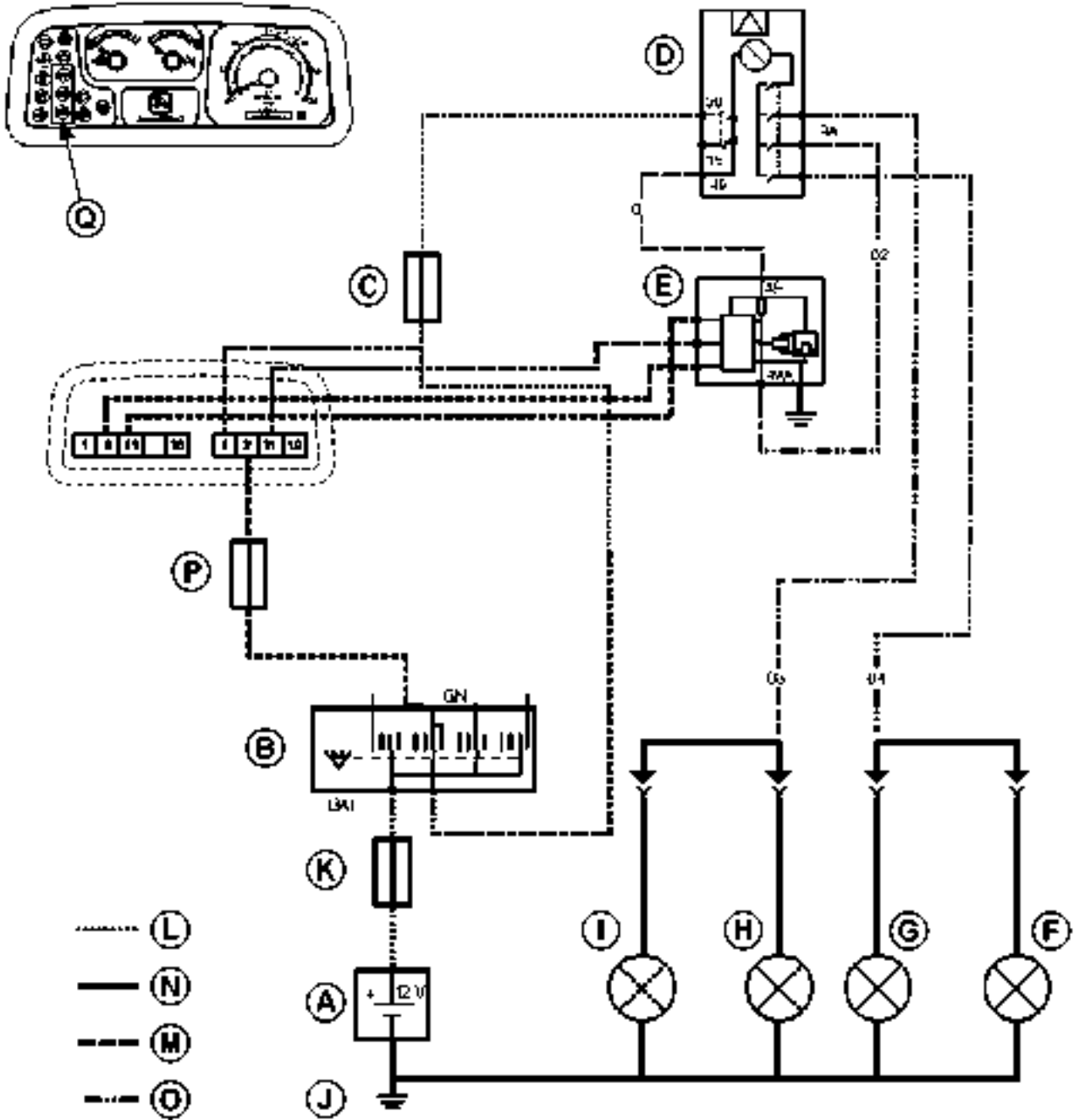
[SE16A - Hazard Warning Lights, Functional Schematic and Theory of Operation](#)

[SE16A - Hazard Warning Lights, Diagnostic Schematic and Circuit Test](#)

[SE16A - Turn Signal Lights, Functional Schematic and Theory of Operation](#)

[SE16A - Turn Signal Lights, Diagnostic Schematic and Circuit Test](#)

SE16A - Hazard Warning Lights, Functional Schematic and Theory of Operation



AT16754

Hazard warning lights

LEGEND:

- A Battery G01
- B Main switch S01
- C Fuse F14, 10 amp
- D Hazard warning light switch S106
- E Turn/warn signal relay K08
- F Left turn signal light H35 (rear side)
- G Left turn signal light H34 (front side)

H	Right turn signal light H44 (front side)
I	Right turn signal light H45 (rear side)
J	Ground
K	Main fuse F00, 50 amp
L	Power circuit
M	Energizing circuit
N	Ground circuit
O	Flashing current
P	Fuse F01, 10 amp
Q	Turn signal light indicators

Function

Alerts approaching traffic of tractor's presence.

Major Components

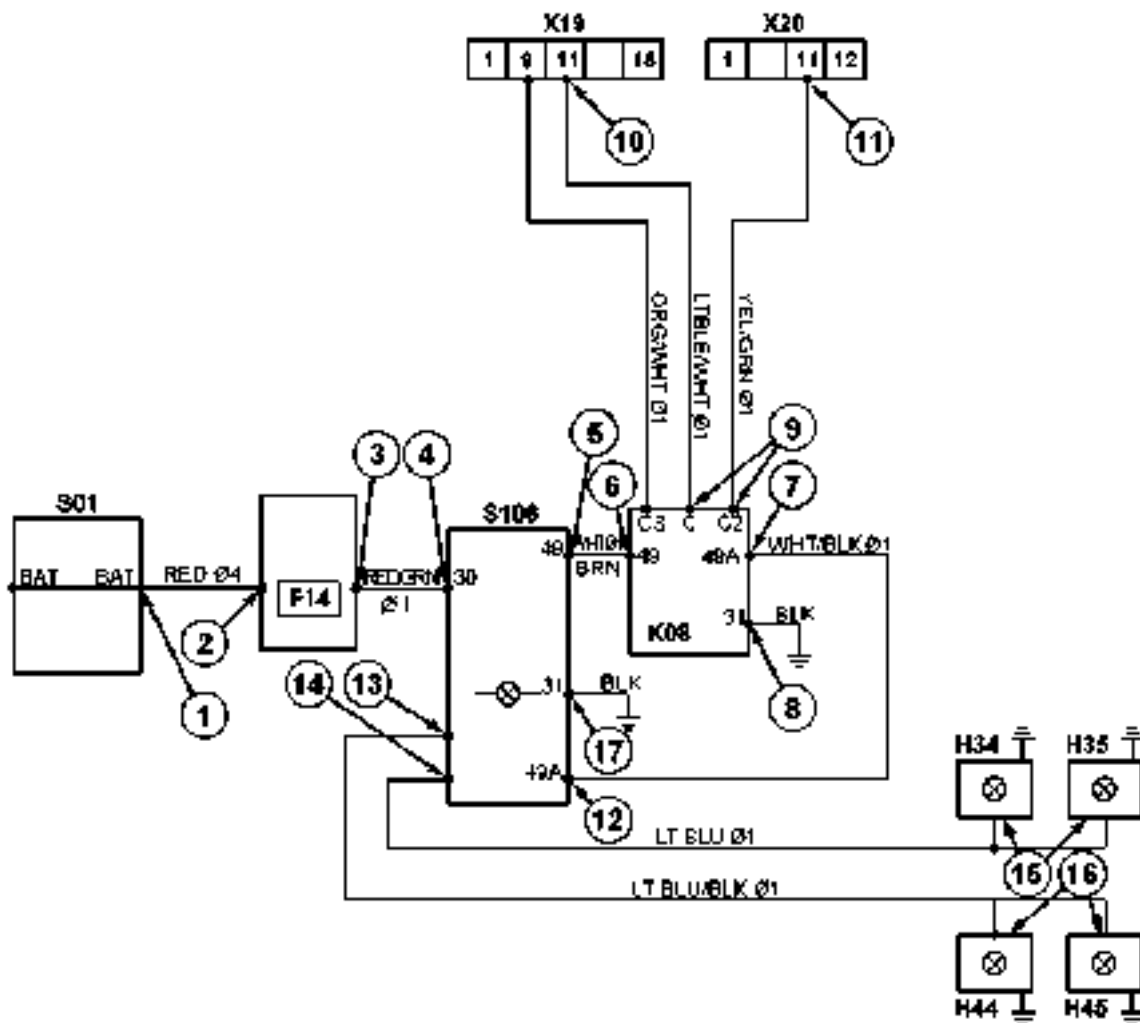
- Fuse F14, 10 amp
- Fuse F01, 10 amp
- Hazard warning light switch S106
- Turn/warn signal relay K08
- Left turn signal light H35 (rear side)
- Left turn signal light H34 (front side)
- Right turn signal light H44 (front side)
- Right turn signal light H45 (rear side)
- Main fuse F00, 50 amp
- 12-pin connector for instrument panel X20
- 18-pin connector for instrument panel X19

Theory of Operation

Pressing the hazard warning light switch S106 activates the turn signal lights on both sides, since the hazard warning light switch S106 is connected directly to battery G01.

Current flows from battery G01 (A), through main switch S01 (B) and 10 amp fuse F14 (C). The flow of current continues across light hazard warning switch S106 contacts (30). Circuit 01 continues to pass current to turn/warn signal relay K08 (E). The relay turns current on and off and connects it to circuit 02. Flashing current returns to terminal 49A of hazard warning light switch S106 (D). Current then flows simultaneously in circuits 03 and 04, flashing both left and right turn signals lights and their respective indicator lights (Q) on instrument.

SE16A - Hazard Warning Lights, Diagnostic Schematic and Circuit Test



AT15717

Lighting system test - hazard warning lights

Meet following requirements:

- Main switch off.
- Gear shift lever in neutral position.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points.
- Meter on DC volt

Hazard Warning Light Test

(1) Check voltage at "BAT" output terminal of main switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test.](#)

(2) Check voltage at F14 fuse input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken red wire between main switch S01 and fuse box.

(3) Check voltage at F14 fuse output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for failed fuse F14 and replace if necessary. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at terminal 30 of hazard warning light switch S106

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken red/green wire between fuse box and hazard switch S106.

(5) Check voltage at terminal 49 of hazard warning light switch S106

Action:

(Turn on the hazard warning light switch S106)

Result must be same as battery voltage.

Result:

YES: [GO TO 6.](#)

NO: Check that hazard warning light switch is in ON position. If switch is in ON position, the switch must be replaced.

(6) Check voltage at white/brown wire terminal 49 of relay K08

Action:

(Turn on the hazard warning light switch S106)

Result must be same as battery voltage.

Result:

YES: [GO TO 7.](#)

NO: Check for corroded connections or broken white/brown wire between hazard warning light switch and relay K08.

(7) Check voltage at white/black wire terminal 49A of relay K08

Action:

(Turn on the hazard warning light switch S106)

Result must be same as battery voltage (pulsing).

Result:

YES: [GO TO 9.](#)

NO: [GO TO 8.](#)

(8) Check ground connection at black wire terminal 31 of relay K08

Action:

Check ground connection.

Result:

YES: If wire is good to ground, replace relay. [GO TO 9.](#)

NO: Check continuity to ground of black wire.

(9) Check voltage at terminals C and C2 of relay K08

Action:

(Turn on the hazard warning light switch S106)

Result must be same as battery voltage (pulsing).

Result:

YES: [GO TO 10.](#)

NO: Replace turn/warn signal relay.

(10) Check voltage at light blue/white wire terminal 11 of 18-pin instrument panel connector X19

Action:

(Turn on the hazard warning light switch S106)

Result must be same as battery voltage (pulsing).

Result:

YES:Check turn signal light indicator (H13) (glows up) and instrument panel. Repair or replace if it is necessary. [GO TO 11.](#)

NO:Check for corroded connections or broken light blue/white wire between relay K08 and instrument panel connector.

(11) Check voltage at yellow/green wire terminal 11 of 12-pin instrument panel connector X20

Action:

(Turn on the hazard warning light switch S106)

Result must be same as battery voltage (pulsing).

Result:

YES:Check turn signal light indicator (H14) (glows up) and instrument panel. Repair or replace if it is necessary. [GO TO 12.](#)

NO:Check for corroded connections or broken yellow/green wire between relay K08 and instrument panel connector.

(12) Check voltage at terminal 49A of hazard warning light switch

Action:

(Turn on the hazard warning light switch S106)

Result must be same as battery voltage (pulsing).

Result:

YES: [GO TO 13.](#)

NO: Check for corroded connections or broken white/black wire between hazard warning light switch S106 and relay K08.

(13) Check voltage at light blue/black wire terminal of hazard warning light switch S106

Action:

(Turn on the hazard warning light switch S106)

Result must be same as battery voltage (pulsing).

Result:

YES: [GO TO 14.](#)

NO: Check that hazard warning light switch is in ON position. If switch is in ON position, the switch must be replaced.

(14) Check voltage at light blue wire terminal of hazard warning light switch S106

Action:

(Turn on the hazard warning light switch S106)

Result must be same as battery voltage (pulsing).

Result:

YES: [GO TO 15.](#)

NO: Check that hazard warning light switch is in ON position. If switch is in ON position, the switch must be replaced.

(15) Check voltage at light blue wire terminal of left turn signal lights H34 and H35

Action:

(Turn on the hazard warning light switch S106)

Result must be same as battery voltage (pulsing).

Result:

YES:Check ground connection. If ground connection is good, replace bulb. [GO TO 16.](#)

NO:Check for corroded connections or broken light blue wire between hazard warning light switch and left turn signal lights H34 and H35.

(16) Check voltage at light blue/black wire terminal of right turn signal lights H44 and H45

Action:

(Turn on the hazard warning light switch S106)

Result must be same as battery voltage (pulsing).

Result:

YES:Check ground connection. If ground connection is good, replace bulb. [GO TO 17.](#)

NO:Check for corroded connections or broken light blue/black wire between hazard warning light switch and right turn signal lights H44 and H45.

(17) Check ground connection at black wire terminal 31 of hazard warning light switch S106

Action:

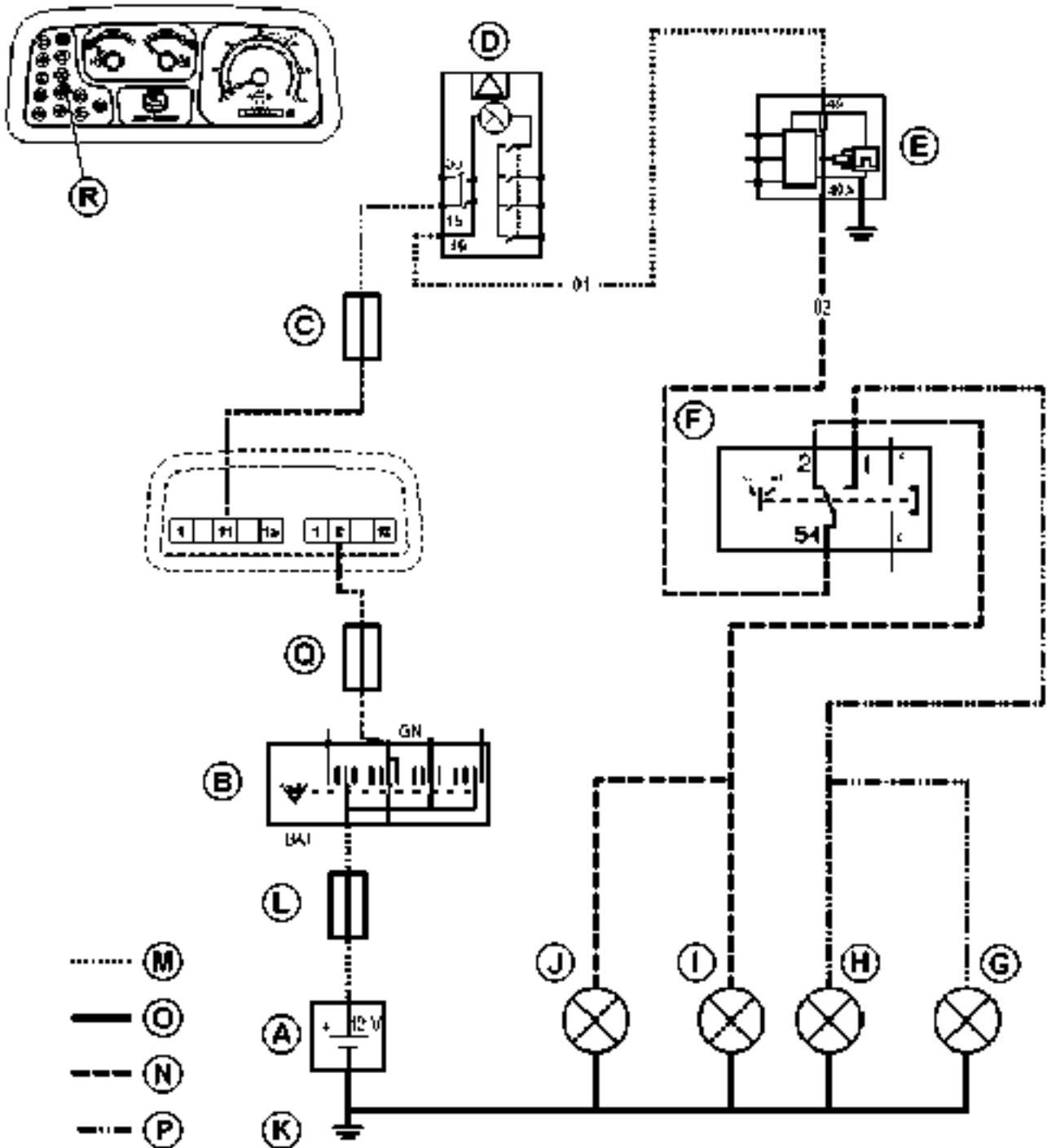
Check ground connection.

Result:

YES:Check that the indicator of hazard warning light switch is flashing. If it does not flash, indicator is bad and must be replaced. END OF TEST.

NO:Check continuity to ground of black wire.

SE16A - Turn Signal Lights, Functional Schematic and Theory of Operation



AT16753

Turn signal lights

LEGEND:

- A Battery G01
- B Main switch S01
- C Fuse F07, 15 amp
- D Hazard warning light switch S106
- E Turn/warn signal relay K08
- F Turn signal light switch S08

- G Left turn signal light H35 (rear side)
- H Left turn signal light H34 (front side)
- I Right turn signal light H44 (front side)
- J Right turn signal light H45 (rear side)
- K Ground
- L Main fuse F00, 50 amp
- M Power circuit
- N Flashing current
- O Ground circuit
- P Steady current
- Q Fuse F01, 10 amp
- R Turn signal light indicators

Function

Alerts approaching traffic of operator's intent to turn.

Major Components

- Main fuse F00, 50 amp
- Fuse F07, 15 amp
- Fuse F01, 10 amp
- Main switch S01
- Hazard warning light switch S106
- Turn/warn signal relay K08
- Turn signal light switch S08
- Left turn signal light H35 (rear side)
- Left turn signal light H34 (front side)
- Right turn signal light H44 (front side)
- Right turn signal light H45 (rear side)
- 12-pin connector for instrument panel X20
- 18-pin connector for instrument panel X19

Theory of Operation

→NOTE:

Left turn shown.

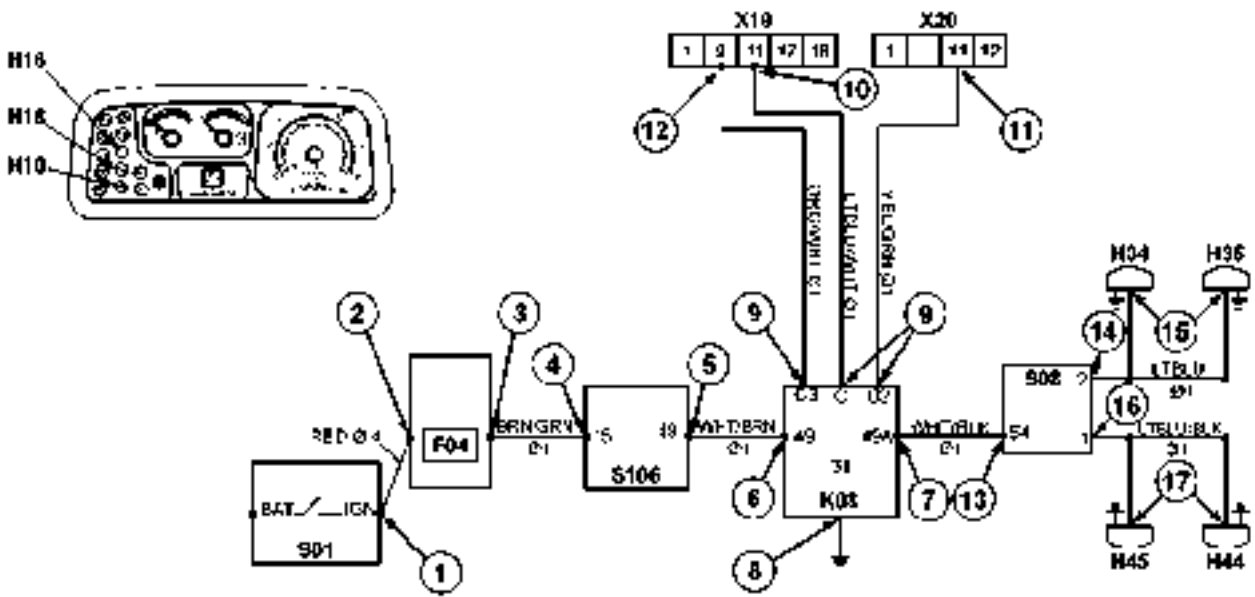
Hazard warning light switch S106 is connected via main switch S01 (B) to battery G01. If the main switch S01 is in position "IGN" and switch S08 (F) is activated, the turn signal lights are activated.

With turn signal light switch S08 in left turn position, current flows from battery (A) through main switch S01 (B) and to 15 amp fuse F07 (C). The flow of current continues across hazard warning light switch S106 contacts (D) and into circuit 01 to turn/warn signal relay K08 (E).

The turn/warn signal relay K08 turns current on and off and connects it to circuit 02. Current reaches turn/warn signal light switch S08 (F) then flows via terminal 1 to left turn signal lights H34/H35 and turn indicators (R).

During right turn operation, current flows through terminal 2 to right turn signal lights H44/H45 and turn indicator (R).

SE16A - Turn Signal Lights, Diagnostic Schematic and Circuit Test



AT15716

Lighting system test - turn signals

Meet following requirements:

- Main switch in run (1) position.
- Hazard warning light switch off.
- Gear shift lever in neutral position.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points.
- Meter on DC volt

Turn Signal Test

(1) Check voltage at "IGN" terminal of main switch S01

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: [Check SE01A - Power Supply, Diagnostic Schematic and Circuit Test.](#)

(2) Check voltage at F07 fuse input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or break in red wire between main switch S01 and fuse box.

(3) Check voltage at F07 fuse output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check fuse and replace if necessary. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at terminal 15 of hazard warning light switch S106

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check for corroded connections or break in brown/green wire between fuse box and hazard warning light switch.

(5) Check voltage at terminal 49 of hazard warning light switch S106

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check that hazard warning light switch is in OFF position. If switch is in OFF position, the switch is bad and has to be replaced.

(6) Check voltage at white/brown wire terminal 49 of turn/warn signal relay K08

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: Check for corroded connections or break in white/brown wire between hazard warning light switch and relay K08.

(7) Check voltage at white/black wire terminal 49A of relay K08

Action:

(Turn signal light switch S08 moved to left or right turn position)

Result must be same as battery voltage (pulsing).

Result:

YES: [GO TO 9](#)

NO: [GO TO 8](#)

(8) Check ground connection at black wire terminal 31 of relay K08

Action:

Check ground connection.

Result:

YES:Check for failed relay K08. Repair or replace if it is necessary. [GO TO 9](#)

NO:Check continuity to ground of black wire.

(9) Check voltage at terminals C, C2 and C3 of relay K08

Action:

(Turn signal light switch S08 moved to left or right turn position)

Result must be same as battery voltage (pulsing).

→NOTE:

Terminal C2 is activated only when one trailer is connected.

Terminal C3 is activated only when two trailers are connected.

Result:

YES: [GO TO 10](#)

NO:Replace turn/warn signal relay.

(10) Check voltage at light blue/white wire terminal 11 of 18-pin connector for instrument panel X19

Action:

(Turn signal light switch S08 moved to left or right turn position)

Result must be same as battery voltage (pulsing).

Result:

YES:Check turn signal indicator (H16) (glow up) and instrument panel. Repair or replace if it is necessary. [GO TO 11](#)

NO:Check for corroded connections or break in light blue/white wire between relay K08 and 18-pin connector for instrument panel X19.

(11) Check voltage at yellow/green wire terminal 11 of 12-pin connector for instrument panel X20

Action:

(Turn signal light switch S08 moved to left or right turn position)

Result must be same as battery voltage (pulsing).

→NOTE:

Terminal C2 is activated only when one trailer is connected.

Result:

YES:Check turn signal indicator (H18) (glow up) and instrument panel. Repair or replace if it is necessary. [GO TO 12](#)

NO:Check for corroded connections or break in yellow/green wire between relay K08 and 12-pin connector for instrument panel X20.

(12) Check voltage at orange/white wire terminal 9 of 18-pin connector for instrument panel X19

Action:

(Turn signal light switch S08 moved to left or right turn position)

Result must be same as battery voltage (pulsing).

→NOTE:

Terminal C3 is activated only when two trailers are connected.

Result:

YES: Check turn signal indicator (H20) (glow up) on instrument. Repair or replace if it is necessary. [GO TO 13](#)

NO: Check for corroded connections or break in orange/white wire between relay K08 and 18-pin connector for instrument panel X19.

(13) Check voltage at white/black wire terminal 54 of turn signal light switch S08

Action:

(Turn signal light switch S08 moved to left or right turn position)

Result must be same as battery voltage (pulsing).

Result:

YES: [GO TO 14](#)

NO: Check for corroded connections or break in white/black wire between relay and turn signal switch S08.

(14) Check voltage at light blue wire terminal 2 of turn signal light switch S08

Action:

(Turn signal light switch S08 moved to left turn position)

Result must be same as battery voltage (pulsing).

Result:

YES: [GO TO 15](#)

NO: Replace turn signal light switch S08.

(15) Check voltage at light blue wire terminal of left turn signal lights H34 and H35

Action:

(Turn signal light switch S08 moved to left turn position)

Result must be same as battery voltage (pulsing).

Result:

YES: Check ground connection. If ground connection is good, replace bulb. [GO TO 16](#)

NO: Check for corroded connections or break in light blue wire between turn signal light switch S08 and left turn signal lights H34/H35.

(16) Check voltage at light blue/black wire terminal 1 of turn signal light switch S08

Action:

(Turn signal light switch S08 moved to right turn position)

Result must be same as battery voltage (pulsing).

Result:

YES: [GO TO 17](#)

NO: Replace turn signal light switch S08.

(17) Check voltage at light blue/black wire terminal of right turn signal lights H44 and H45

Action:

(Turn signal light switch S08 moved to right turn position)

Result must be same as battery voltage (pulsing).

Result:

YES:Check ground connection. If ground connection is good, replace bulb. END OF TEST

NO:Check for corroded connections or break in light blue/black wire between turn signal light switch S08 and right turn signal lights H44/H45.

Group S16B - SE16B - PTO System

SE16B - PTO System (Summary of References)

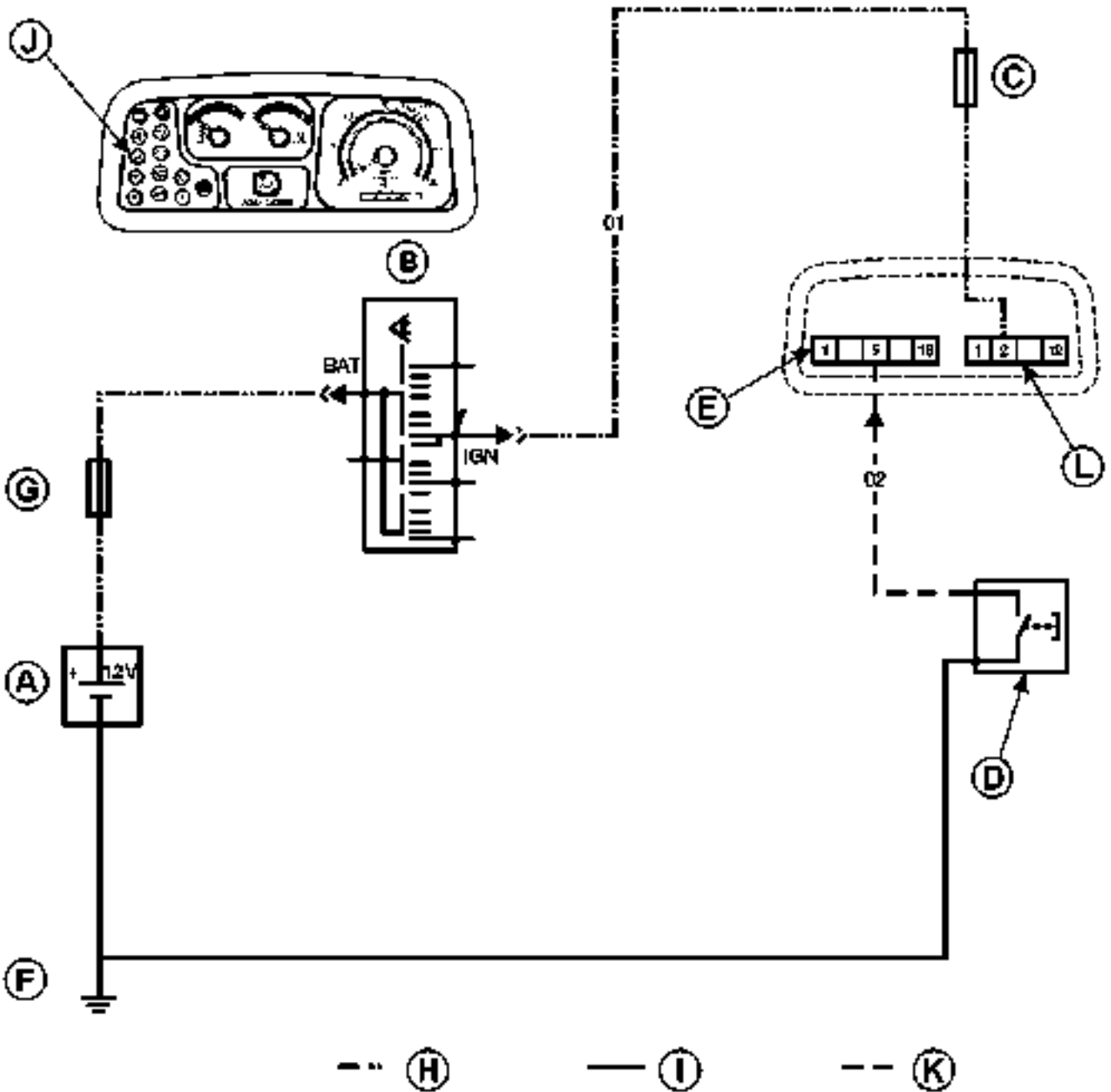
[SE16B - PTO Warning System, Functional Schematic and Theory of Operation](#)

[SE16B - PTO Warning System, Diagnostic Schematic and Circuit Test](#)

[SE16B - PTO Speed System, Digital Version, Functional Schematic and Theory of Operation](#)

[SE16B - PTO Speed System, Digital Version, Diagnostic Schematic and Circuit Test](#)

SE16B - PTO Warning System, Functional Schematic and Theory of Operation



AT3721

PTO warning system operation

LEGEND:

- A Battery G01
- B Main switch S01
- C Fuse F01, 10 amp
- D PTO safety switch B08
- E 18-pin connector for instrument panel X19
- F Ground
- G Main fuse F00, 50 amp
- H Power Circuit

- I Ground Circuit
- J PTO indicator
- K Sensing circuit
- L 12-pin connector for instrument panel X20

Function

Alerts operator that PTO is engaged.

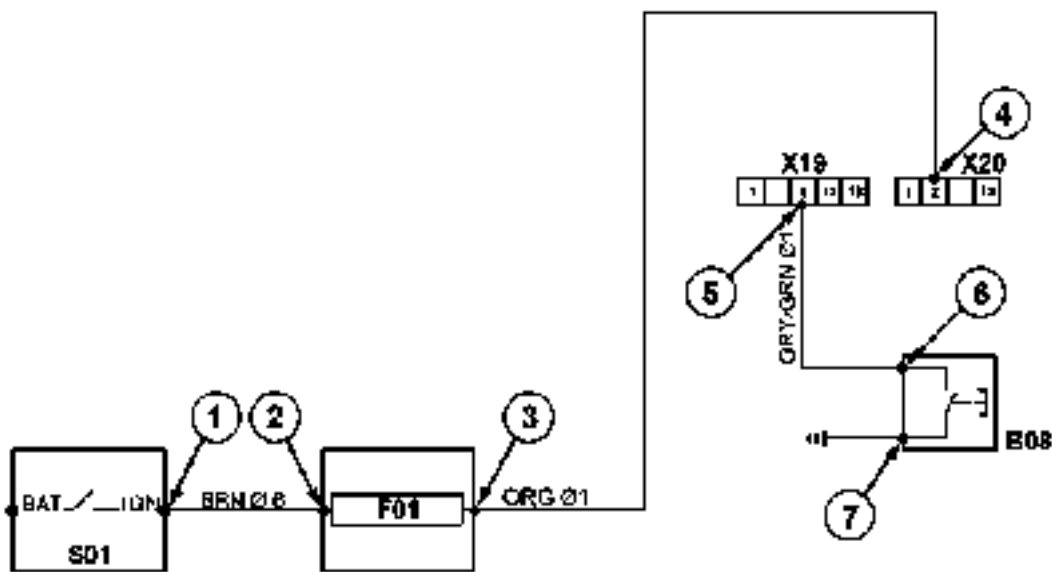
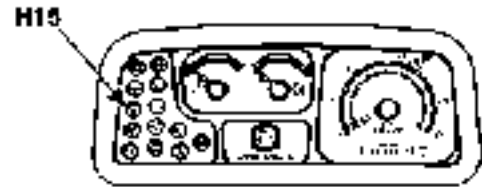
Major Components

- Fuse F01, 10 amp
- Main fuse F00, 50 amp
- Main switch S01
- PTO safety switch B08
- 12-pin connector for instrument panel X20
- 18-pin connector for instrument panel X19
- PTO indicator light

Theory of Operation

Current passes through closed contacts of main switch S01 (B) to circuit 01, then through 10 amp fuse F01 (C) to instrument panel. 18-pin connector for instrument panel X19 (E) is connected to PTO safety switch B08 (D) through circuit 02.

SE16B - PTO Warning System, Diagnostic Schematic and Circuit Test



AT15716

Instrument panel test - PTO warning system

Meet following requirements:

- Main switch in RUN (1) position.
- PTO disengaged.
- Gear shift lever in neutral position.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points.
- Meter on DC volt.

PTO Warning System Test

(1) Check voltage at "IGN" terminal of main switch S01

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test.](#)

(2) Check voltage at F01 fuse input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken brown wire between main switch S01 and fuse box.

(3) Check voltage at F01 fuse output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for failed fuse F01. Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at orange wire terminal 2 of 12-pin connector of instrument panel X20

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken orange wire between fuse box and instrument panel.

(5) Check ground connection at green/grey wire terminal 5 of 18-pin connector of instrument panel X19

Action:

(Operator in seat)

(Move PTO lever to engaged position)

Check ground connection.

Result:

YES: Check PTO indicator (H15) (glow up) on instrument. Repair or replace if it is necessary.

NO: [GO TO 6.](#)

(6) Check ground connection at green/grey wire terminal of PTO safety switch B08

Action:

(Operator in seat)

(Move PTO lever to engaged position)

Check ground connection.

Result:

YES:Check for corroded connections or broken green/grey wire between PTO switch and instrument panel connector.

NO: [GO TO 7.](#)

(7) Check ground connection at black wire terminal of PTO safety switch B08

Action:

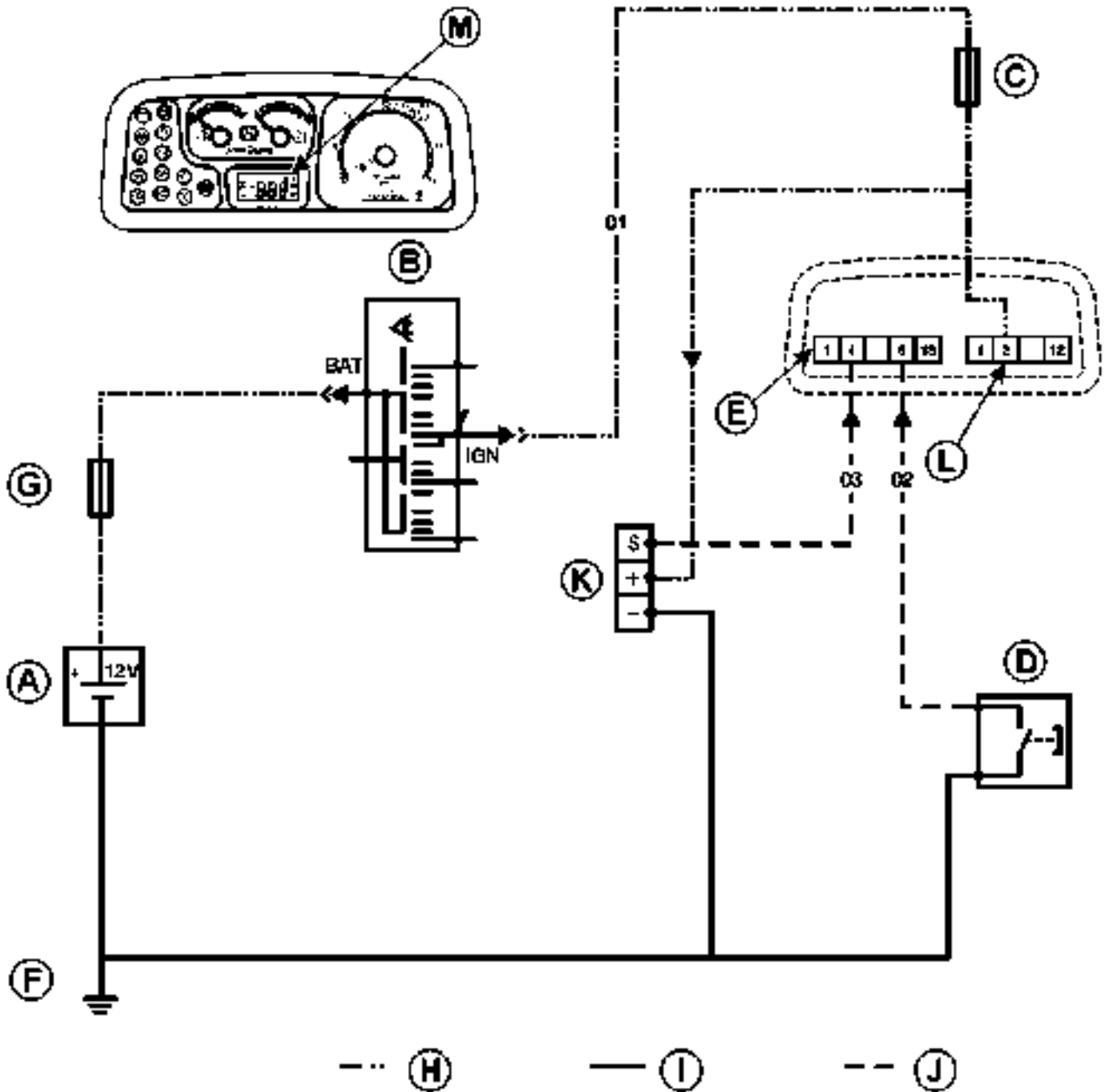
Check ground connection.

Result:

YES:Check PTO safety switch B08. Repair or replace if it is necessary. END OF TEST.

NO:Check continuity to ground of black wire.

SE16B - PTO Speed System, Digital Version, Functional Schematic and Theory of Operation



AT3731

PTO speed system operation

LEGEND:

- A Battery G01
- B Main switch S01
- C Fuse F01, 10 amp
- D PTO speed selection switch B07
- E 18-pin connector for instrument panel X19
- F Ground
- G Main fuse F00, 50 amp
- H Power circuit

- I Ground circuit
- J Sensing circuit
- K Transmission speed sensor B06
- L 12-pin connector for instrument panel X20
- M Display

Function

Informs operator of engine speed.

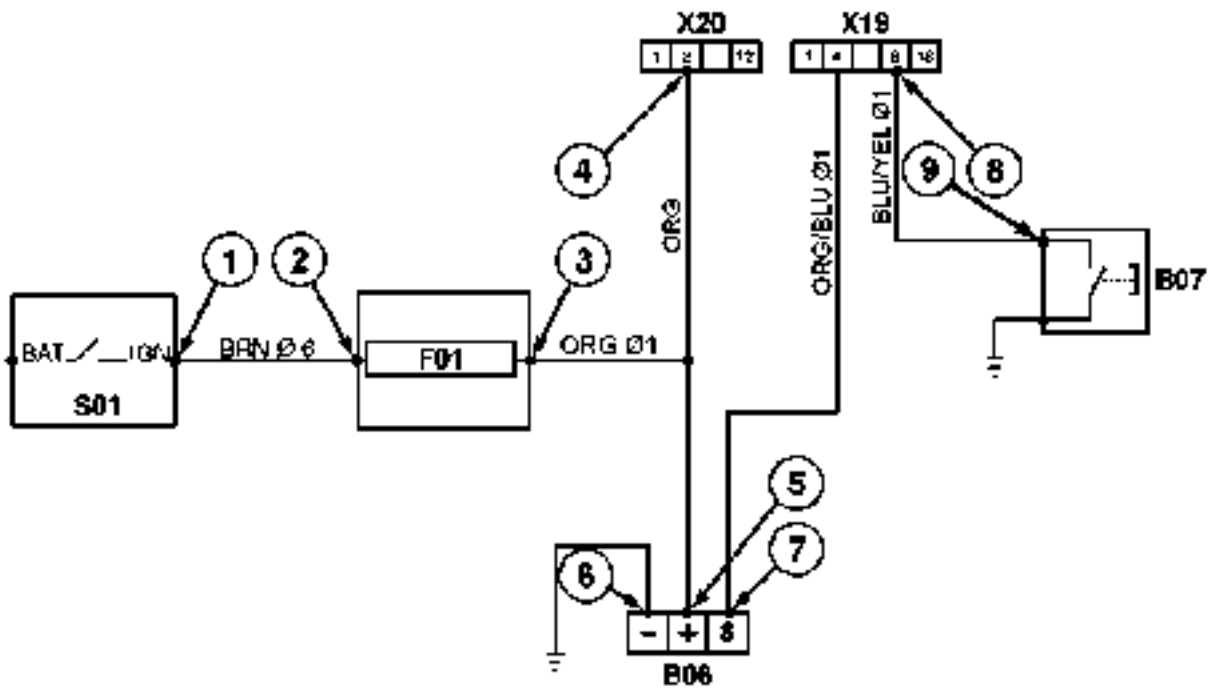
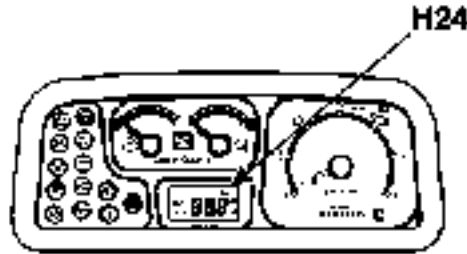
Major Components

- Fuse F01, 10 amp
- Main fuse F00, 50 amp
- Main switch S01
- 12-pin connector for instrument panel X20
- 18-pin connector for instrument panel X19
- PTO speed selection switch B07
- Transmission speed sensor B06

Theory of Operation

Current passes through closed contacts of main switch S01 (B) to circuit 01, then through 10 amp fuse F01 (C) to instrument panel and to transmission speed sensor B06 (K). 18-pin connector for instrument panel X19 (E) is connected to PTO speed selection switch B07 (D) and transmission speed sensor B06 (K) through circuits 02 and 03.

SE16B - PTO Speed System, Digital Version, Diagnostic Schematic and Circuit Test



AT15714

Instrument panel test - PTO speed system (digital version)

Meet following requirements:

- Main switch in RUN (1) position.
- PTO disengaged.
- Gear shift lever in neutral position.
- Meter positive lead on numbered test points.
- Meter negative lead on numbered test points.
- Meter on DC volt.

PTO Speed System Test

(1) Check voltage at "IGN" terminal of main switch S01

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at F01 fuse input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken brown wire between main switch S01 and fuse box.

(3) Check voltage at F01 fuse output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for failed fuse F01. Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at orange wire terminal 2 of 12-pin connector for instrument panel X20

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken orange wire between fuse box and instrument panel.

(5) Check voltage at orange/blue wire terminal of transmission speed sensor B06 (Terminal +)

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6.](#)

NO: Check for corroded connections or broken orange/blue wire between fuse box and transmission speed sensor B06. Repair or replace connector.

(6) Check voltage at black wire terminal of transmission speed sensor B06 (Terminal -)

Action:

(Move PTO engagement lever to engaged position)

Result must be less than 0.2 volt.

Result:

YES: [GO TO 7.](#)

NO: Check for corroded connections or broken black wire. Repair or replace connector.

(7) Check resistance at orange/blue wire terminal of transmission speed sensor B06

Action:

(Disconnect sensing unit socket)

(Multimeter on ohm scale)

Resistance must be maximum 0.5 ohm

Result:

YES: [GO TO 8.](#)

NO: Check for corroded connections or broken orange/blue wire between unit transmission speed sensor B06 and instrument panel. Repair or replace transmission speed sensor B06.

Note: If display H24 is switched off or shows wrong information, replace instrument panel.

(8) Check ground connection at blue/yellow wire terminal 8 of 18-pin connector for instrument panel X19

Action:

(Move PTO lever to 540 position)

Check ground connection.

Result:

YES: Check instrument panel and replace if it is necessary. END OF TEST.

NO: Make sure connector is completely engaged and PTO lever is in engaged position. Check for corroded or damaged terminals. [GO TO 9.](#)

(9) Check ground connection at blue/yellow wire terminal of PTO speed selection switch B07

Action:

(Move PTO lever to 540 position)

Check ground connection.

Result:

YES:Check for corroded connections or broken blue/yellow wire between instrument panel and PTO speed selection switch B07. END OF TEST.

NO:Check ground connection of PTO speed selection switch B07. If ground connection is good, check PTO speed selection switch B07 and replace if it is necessary.

Group S16C - SE16C - Front-Wheel Drive, Differential Lock and Braking System

SE16C - Front-Wheel Drive, Differential Lock and Braking System (Summary of References)

[SE16C - Brake Pedal Switches, Functional Schematic and Theory of Operation](#)

[SE16C - Front-Wheel Drive, Functional Schematic and Theory of Operation](#)

[SE16C - Differential Lock, Diagnostic Schematic and Circuit Test](#)

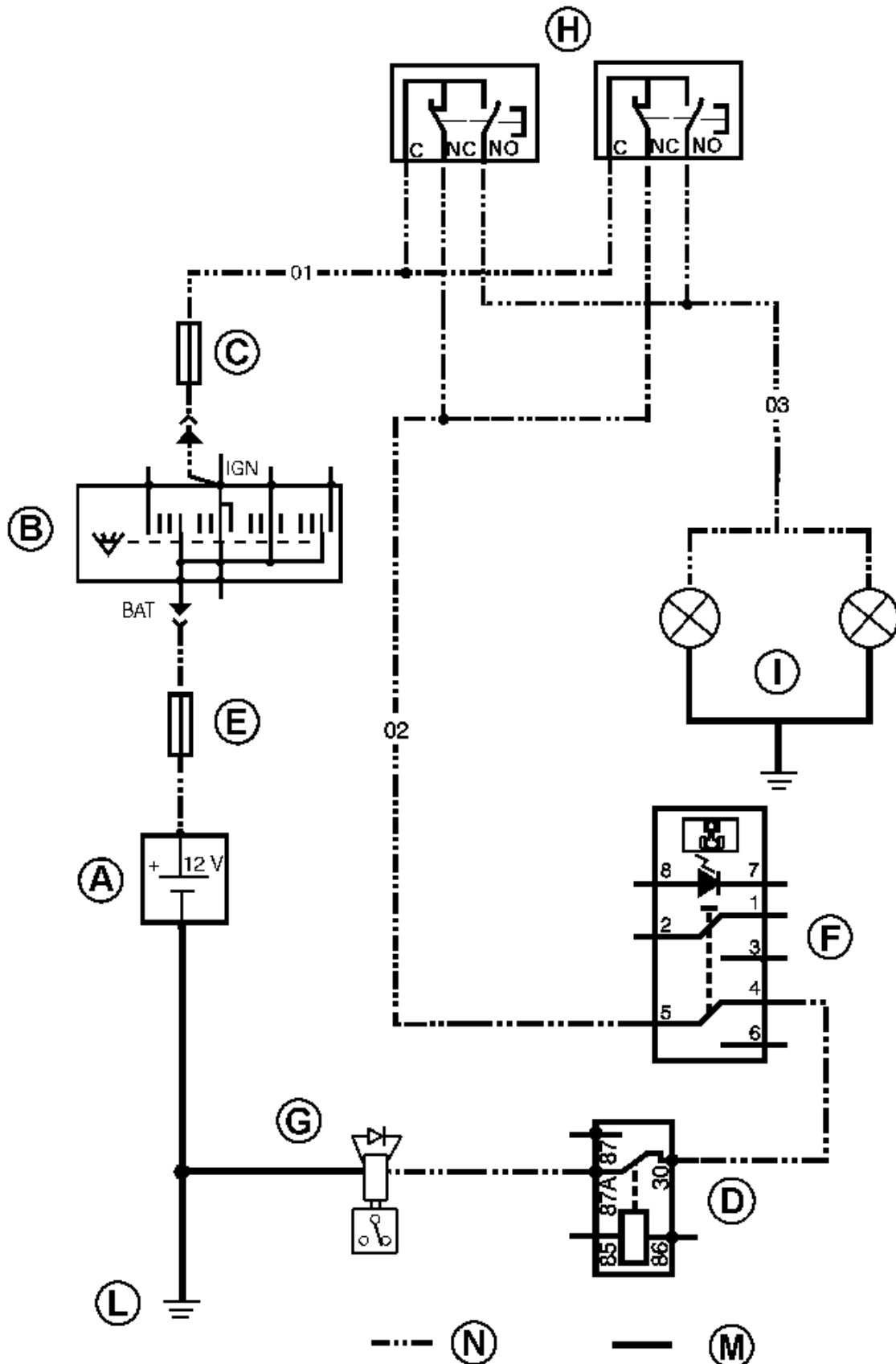
[SE16C - Stop Lights, Front-Wheel Drive Circuit and Parking Brake Circuit, Diagnostic Schematic and Circuit Test](#)

[SE16C - Stop Lights, Diagnostic Schematic and Circuit Test](#)

[SE16C - Parking Brake Indicator, Diagnostic Schematic and Circuit Test](#)

[SE16C - Differential Lock Disengagement Solenoid Circuit Test](#)

SE16C - Brake Pedal Switches, Functional Schematic and Theory of Operation



Brake pedal switch operation

LEGEND:

- A Battery G01
- B Main switch S01
- C Fuse F09, 15 amp
- D Front-wheel drive relay K05
- E Main fuse F00, 50 amp
- F Front-wheel drive switch S63
- G Front-wheel drive solenoid valve Y03
- H Brake pedal switches B112
- I Stop lights H32 and H33
- L Ground
- M Ground circuit
- N Power circuit

Function

Enables brake pedal operation and alerts approaching traffic of tractor braking.

Major Components

- Front-wheel drive switch S63
- Front-wheel drive solenoid valve Y03
- Brake pedal switches B112
- Fuse F09, 15 amp
- Front-wheel drive relay K05
- Main fuse F00, 50 amp
- Main switch S01
- Stop lights H32 and H33

Theory of Operation

Current flows from battery G01 (A), through main fuse F00 (E) across closed contact of main switch S01 (B). Flow continues (circuit 01) through 15 amp fuse F09 (C) to brake pedal switches B112 (H).

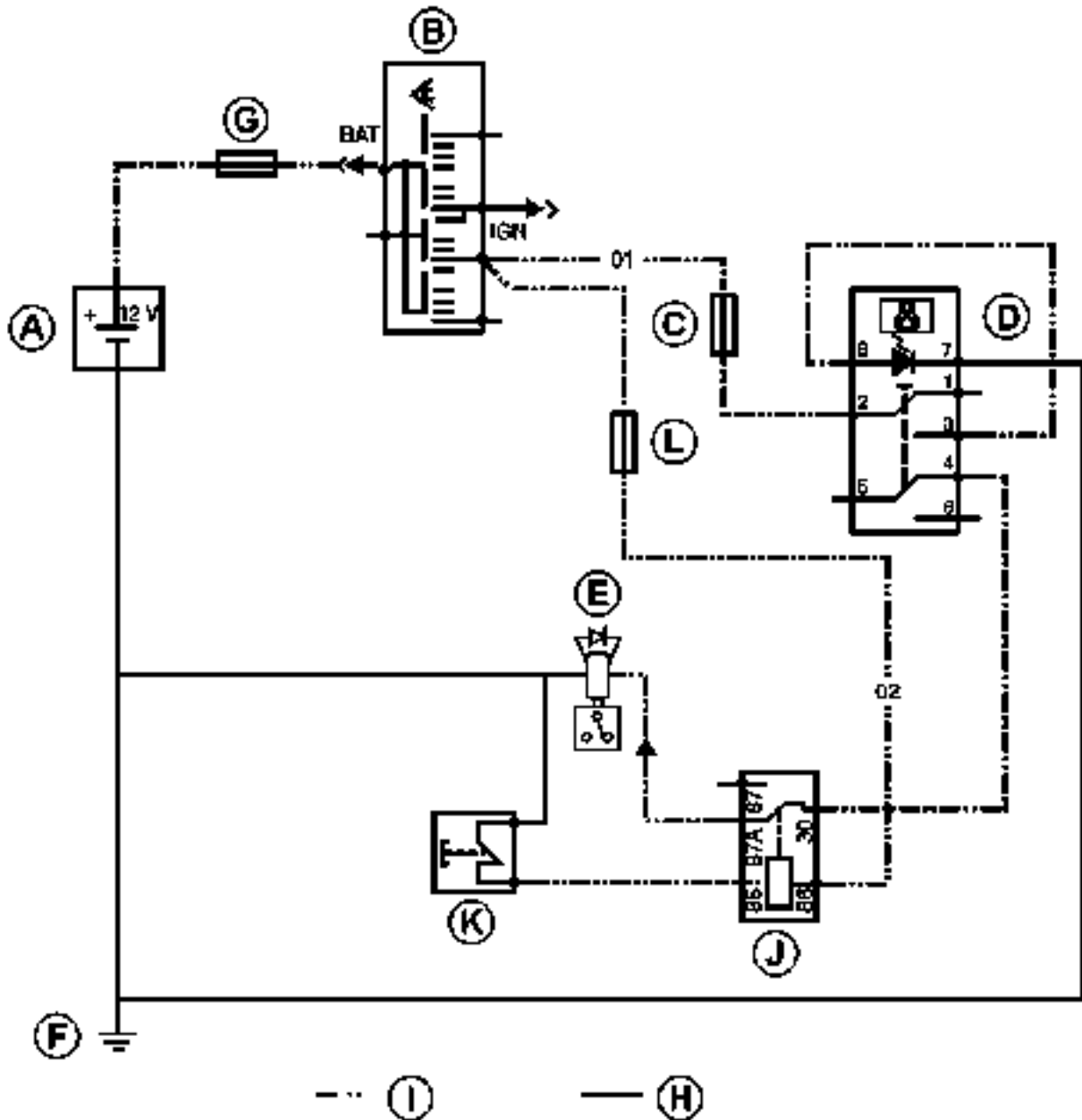
When operator pushes on brake pedal, flow continues to left and right stop lights H32/H33 (circuit 03). At the same time, flow continues through circuit 02 to front-wheel drive switch S63 (F).

From front-wheel drive switch S63, flow continues to front-wheel drive solenoid valve Y03 (G), across closed contact of front-wheel drive relay K05 (D) and engages the automatic front-wheel drive.

→NOTE:

When the brakes are applied, front-wheel drive cuts in automatically regardless of the position selected at the front-wheel drive switch. In this case the indicator light does not come on.

SE16C - Front-Wheel Drive, Functional Schematic and Theory of Operation



AT16872

Front-wheel drive operation

LEGEND:

- A Battery G01
- B Main switch S01
- C Fuse F10, 7.5 amp
- D Front-wheel drive switch S63
- E Front-wheel drive solenoid valve Y03
- F Ground
- G Main fuse F00, 50 amp
- H Ground circuit
- I Ground circuit

- I Power circuit
- J Front-wheel drive relay K05
- K Parking brake switch B05
- L Fuse F08, 7.5 amp

Function

To improve traction, if required.

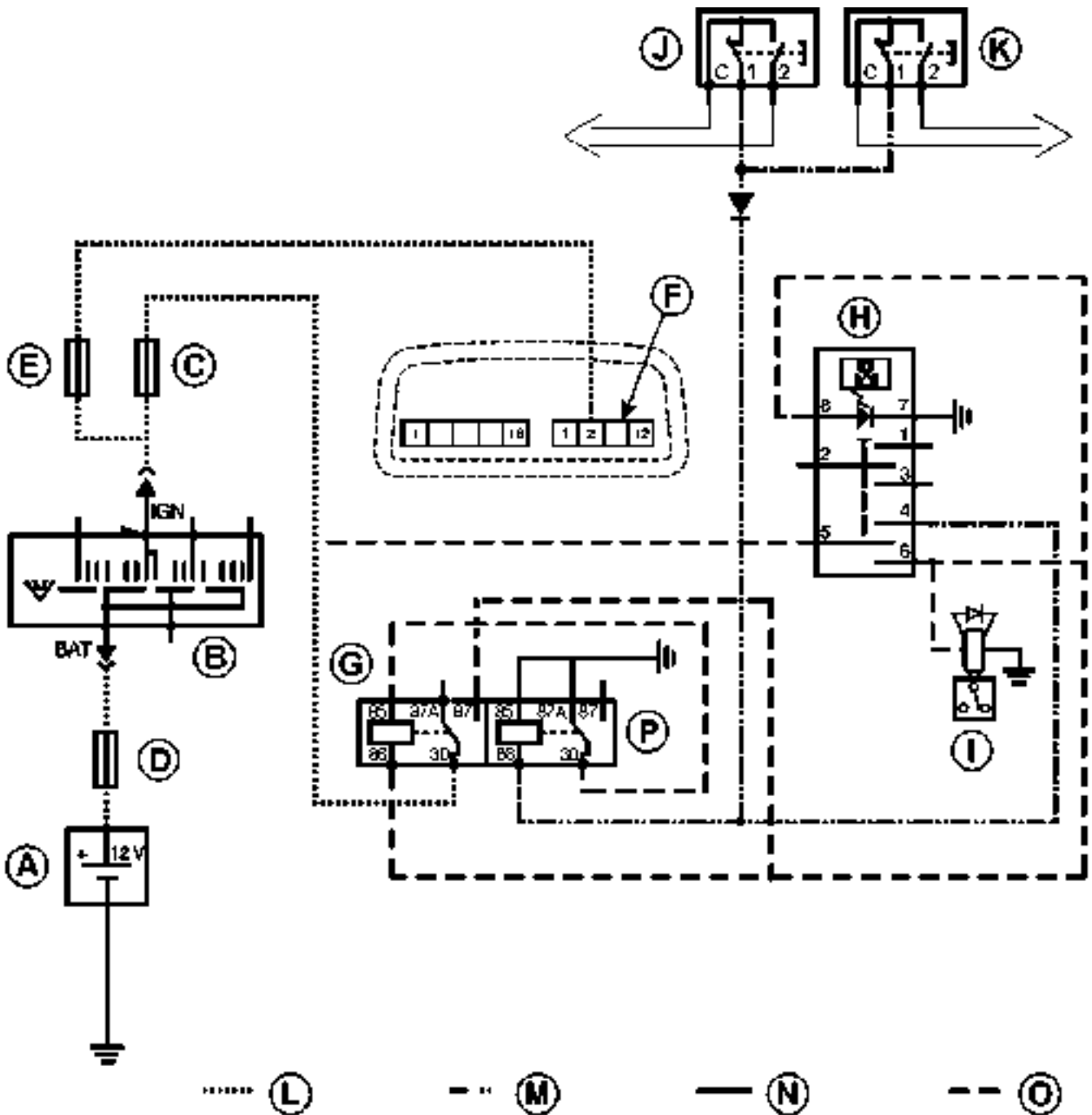
Major Components

- Front-wheel drive switch S63
- Front-wheel drive solenoid valve Y03
- Parking brake switch B05
- Fuse F10, 7.5 amp
- Fuse F08, 7.5 amp
- Main fuse F00, 50 amp
- Main switch S01
- Front-wheel drive relay K05

Theory of Operation

Current flows from battery G01 (A), through main fuse F00 (G) across closed contact of main switch S01 (B). Flow continues through 7.5 amp fuse F10 (C) to front-wheel drive switch S63 (D). When the parking brake is engaged, the parking brake switch B05 is also engaged and flow continues to front-wheel drive solenoid valve Y03 (E), across closed contact of front-wheel drive relay K05 (J). The front-wheel drive switch S63 lights up.

SE16C - Differential Lock, Functional Schematic and Theory of Operation



AT16883

Differential lock circuit

LEGEND:

- A Battery G01
- B Main switch S01
- C Fuse F10, 7.5 amp
- D Main fuse F00, 50 amp

- E Fuse F01, 10 amp
- F 12-pin connector for instrument panel X20
- G Differential lock relay K04 (ON)
- H Differential lock switch S23
- I Differential lock solenoid valve Y05
- J Brake pedal switch B112/R (right)
- K Brake pedal switch B112/L (left)
- L Power circuit
- M Sensing circuit
- N Ground circuit
- O Pilot circuit
- P Differential lock relay K06 (OFF)

Function

Engages differential lock, when one wheel starts to lose traction.

Major Components

- Main fuse F00, 50 amp
- Fuse F01, 10 amp
- Fuse F10, 7.5 amp
- 12-pin connector for instrument panel X20
- Differential lock switch S23
- Differential lock relay K04 (ON)
- Differential lock relay K06 (OFF)
- Differential lock solenoid valve Y05
- Brake pedal switch B112/L (left)
- Brake pedal switch B112/R (right)

Theory of Operation

Current flows from battery G01 (A), through main fuse F00 (D) across closed contact of main switch S01 (B).

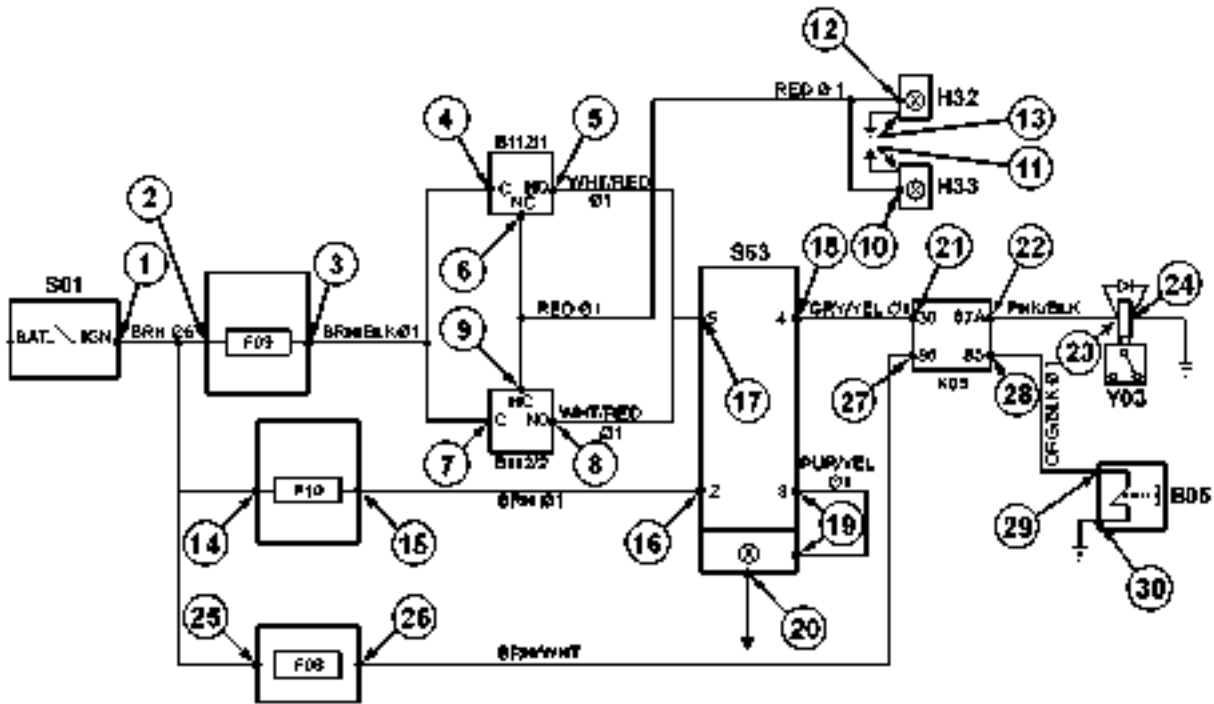
Flow continues (circuit L) through fuse F10 (C) reaching the differential lock switch S23 (H) and the K04 relay (G).

If the operator pushes switch (H), the flow reaches the differential lock solenoid valve (I) and the differential lock relay K04 (ON). The ground supply of relay K04 is provided by the deactivated relay K06. The relay K04 output supplies the differential lock solenoid valve Y05 (I). If the operator pushes the differential lock switch S23 (H) on the opposite side, differential lock relay K06 (OFF) is activated and disconnects the ground connection of relay K04 (ON). Thus, relay K04 is deactivated, cutting off the supply voltage to the differential lock solenoid valve Y05 (I).

→NOTE:

The differential lock is also deactivated if one or both brake pedals are pressed.

SE16C - Stop Lights, Front-Wheel Drive Circuit and Parking Brake Circuit, Diagnostic Schematic and Circuit Test



AT15713

Stop lights, front-wheel drive circuit and parking brake circuit

Meet following requirements:

- Main switch in RUN (1) position.
- Gear shift lever in neutral position.
- PTO disengaged.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Stop Lights, Front-Wheel Drive Circuit and Parking Brake Circuit Test

(1) Check voltage at "IGN" terminal of main switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: Check that main switch is in run position. If switch is in run, switch is bad. Replace if necessary.

(2) Check voltage at fuse F09 input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or break in brown wire between main switch and fuse box.

(3) Check voltage at fuse F09 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for failed fuse F09. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at brown/black wire terminal "C" of left brake pedal switch B112/L

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check for corroded connections or break in brown/black wire between fuse box and left brake pedal switch B112/L.

(5) Check voltage at white/red wire terminal N0 of left brake pedal switch B112/L

Action:

(Push left brake pedal and hold)

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded or loose terminals. Replace left brake pedal switch if necessary.

(6) Check voltage at red wire terminal NC of left brake pedal switch B112/L

Action:

(Push left brake pedal and hold)

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: Check for corroded or loose terminals. Replace left brake pedal switch if necessary.

(7) Check voltage at brown/black wire terminal "C" of right brake pedal switch B112/R

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO: Check for corroded connections or break in brown/black wire between fuse box and right brake pedal switch.

(8) Check voltage at white/red wire terminal N0 of right brake pedal switch B112/R

Action:

(Push right brake pedal and hold)

Result must be same as battery voltage.

Result:

YES: [GO TO 9](#)

NO: Check for corroded or loose terminals. Replace right brake pedal switch if necessary.

(9) Check voltage at red wire terminal NC of right brake pedal switch B112/R

Action:

(Push right brake pedal and hold)

Result must be same as battery voltage.

Result:

YES: [GO TO 10](#)

NO: Check for corroded or loose terminals. Replace right brake pedal switch if necessary.

(10) Check voltage at red wire terminal of connector X25 for right stop light H33

Action:

(Push brake pedal and hold)

Result must be same as battery voltage.

Result:

YES: [GO TO 11](#)

NO:Check for corroded connections or break in red wire between brake switch and connector X25 for right stop light H33.

(11) Check ground connection of right stop light H33

Action:

Check ground connection.

Result:

YES:If ground connection or wire is good, bulb is bad. Replace bulb. [GO TO 12](#)

NO:Check continuity to ground of black wire.

(12) Check voltage at red wire terminal of connector X24 for left stop light H32

Action:

(Push brake pedal and hold)

Result must be same as battery voltage.

Result:

YES: [GO TO 13](#)

NO:Check for corroded connections or break in red wire between brake switch B112 and connector X24 for left stop light H32.

(13) Check ground connection of left stop light H32

Action:

Check ground connection.

Result:

YES:If ground connection or wire is good, bulb is bad. Replace bulb. [GO TO 14](#)

NO:Check continuity to ground of black wire.

(14) Front-Wheel Drive Circuit: Check voltage at fuse F10 input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 15](#)

NO:Check for corroded connections or break in brown wire between main switch and fuse box.

(15) Check voltage at fuse F10 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 16](#)

NO:Check for failed fuse F10. If fuse is good, check for corroded or loose terminals.

(16) Check voltage at brown wire terminal of front-wheel drive switch S63

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 17](#)

NO: Check for corroded connections or break in brown wire between fuse F10 and front-wheel drive switch S63.

(17) Check voltage at white/red wire terminal of front-wheel drive switch S63

Action:

(Disengage front-wheel drive)

Result must be same as battery voltage.

Result:

YES: [GO TO 18](#)

NO: Check for corroded connections or break in white/red wire between brake pedal switches and front-wheel drive switch S63.

(18) Check voltage at grey/yellow wire terminal of front-wheel drive switch S63

Action:

(Disengage front-wheel drive)

Result must be same as battery voltage.

Result:

YES: [GO TO 19](#)

NO: Check for corroded or loose terminals. Replace front-wheel drive switch S63 if necessary.

(19) Check voltage at purple/yellow wire terminal of front-wheel drive switch S63

Action:

(Engage front-wheel drive)

Result must be same as battery voltage.

Result:

YES: [GO TO 20](#)

NO: Check for corroded connections or break in purple/yellow wire of front-wheel drive switch S63. Replace front-wheel drive switch if necessary.

(20) Check ground connection at black wire terminal of front-wheel drive switch S63

Action:

Check ground connection.

Result:

YES: Check front-wheel drive indicator. If indicator is good, replace front-wheel drive switch if necessary. [GO TO 21](#)

NO: Check continuity to ground of black wire.

(21) Check voltage at grey/yellow wire terminal 30 of front-wheel drive relay K05

Action:

(Disengage front-wheel drive)

Result must be same as battery voltage.

Result:

YES: [GO TO 22](#)

NO: Check for corroded connections or break in grey/yellow wire between front-wheel drive switch and relay K05.

(22) Check voltage at terminal 87A of relay K05

Action:

(Disengage front-wheel drive)

Result must be same as battery voltage.

Result:

YES: [GO TO 23](#)

NO: [GO TO 25](#)

(23) Check voltage at pink/black wire terminal of front-wheel drive solenoid valve Y03

Action:

(Disengage front-wheel drive)

Result must be same as battery voltage.

Result:

YES: [GO TO 24](#)

NO: Check for corroded connections or break in pink/black wire between relay K05 and front-wheel drive solenoid valve Y03.

(24) Check ground connection at black wire terminal of front-wheel drive solenoid valve

Action:

Check ground connection.

Result:

YES: Check solenoid valve, replace if necessary. [GO TO 25](#)

NO: Check continuity to ground of black wire.

(25) Parking brake circuit: Check voltage at fuse F08 input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 26](#)

NO: Check for corroded connections or break in brown wire between main switch and fuse box.

(26) Check voltage at fuse F08 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 27](#)

NO: Check for failed fuse F08. If fuse is good, check for corroded or loose terminals.

(27) Check voltage at brown/white wire terminal 86 of relay K05

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 28](#)

NO: Check for corroded connections or break in brown/white wire between fuse F08 and relay K05.

(28) Check voltage at orange/black wire terminal 85 of front-wheel drive relay K05

Action:

(Engage parking brake)

Result must be same as battery voltage.

Result:

YES: [GO TO 29](#)

NO: Check for failed relay K05. If relay is good, check for corroded or loose terminals and replace if necessary.

(29) Check voltage at orange/black wire terminal of parking brake switch B05

Action:

(Engage parking brake)

Result must be same as battery voltage.

(Disengage parking brake)

Result must be less than 0.2 volt.

Result:

YES: Electrical System is OK. See " [Operational Test on Front-Wheel Drive Axle](#) ", Group 280-10.

NO: Check for failed parking brake switch B05. If switch is good, check for corroded or loose terminals and replace if necessary. [GO TO 30](#)

(30) Check ground connection at black wire terminal of parking brake switch B05

Action:

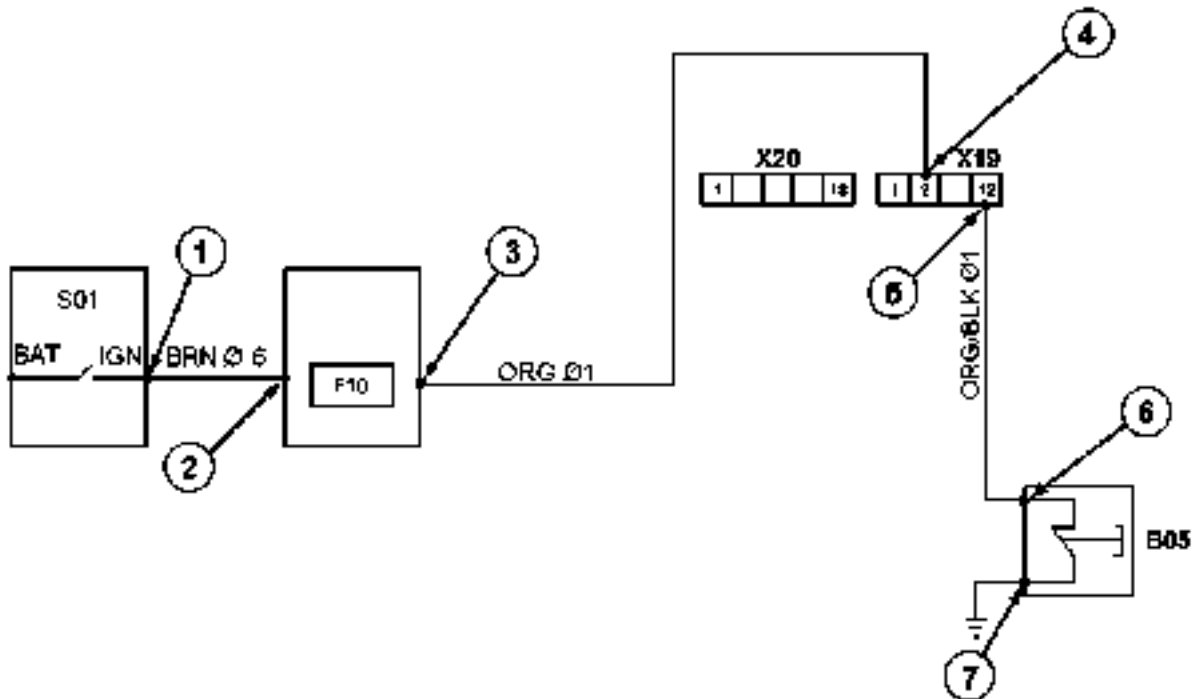
Check ground connection.

Result:

YES:Electrical System is OK.See " [Operational Test on Front-Wheel Drive Axle](#) ", Group 280-10.

NO:Check continuity to ground of black wire.

SE16C - Parking Brake, Diagnostic Schematic and Circuit Test



AT15712

Instrument panel test - parking brake

Meet following requirements:

- Main switch in RUN (1) position.
- PTO disengaged.
- Gear shift lever in neutral position.
- Meter positive lead on numbered test points.
- Meter on DC volt.

Parking Brake Test

(1) Check voltage at "IGN" terminal of main switch

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at F01 fuse input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken brown wire between main switch and fuse box.

(3) Check voltage at F01 fuse output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for failed fuse F01. Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at orange wire terminal 2 of 12-pin connector for instrument panel X20

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken orange wire between fuse box and 12-pin connector for instrument panel X20.

(5) Check ground connection at orange/black wire terminal 12 of 12-pin connector for instrument panel X20

Action:

(Parking brake lever to engaged position)

Check ground connection.

Result:

YES: Check parking brake indicator (H17) (glow up) on instrument panel. Repair or replace if it is necessary.

NO: [GO TO 6.](#)

(6) Check ground connection at orange/black wire terminal of parking brake switch B05

Action:

(Parking brake lever to engaged position)

Check ground connection.

Result:

YES: Check for corroded connections or broken orange/black wire between terminal 12 of 12-pin connector for instrument panel X20 and parking brake switch B05.

NO: [GO TO 7.](#)

(7) Check ground connection at parking brake switch B05

Action:

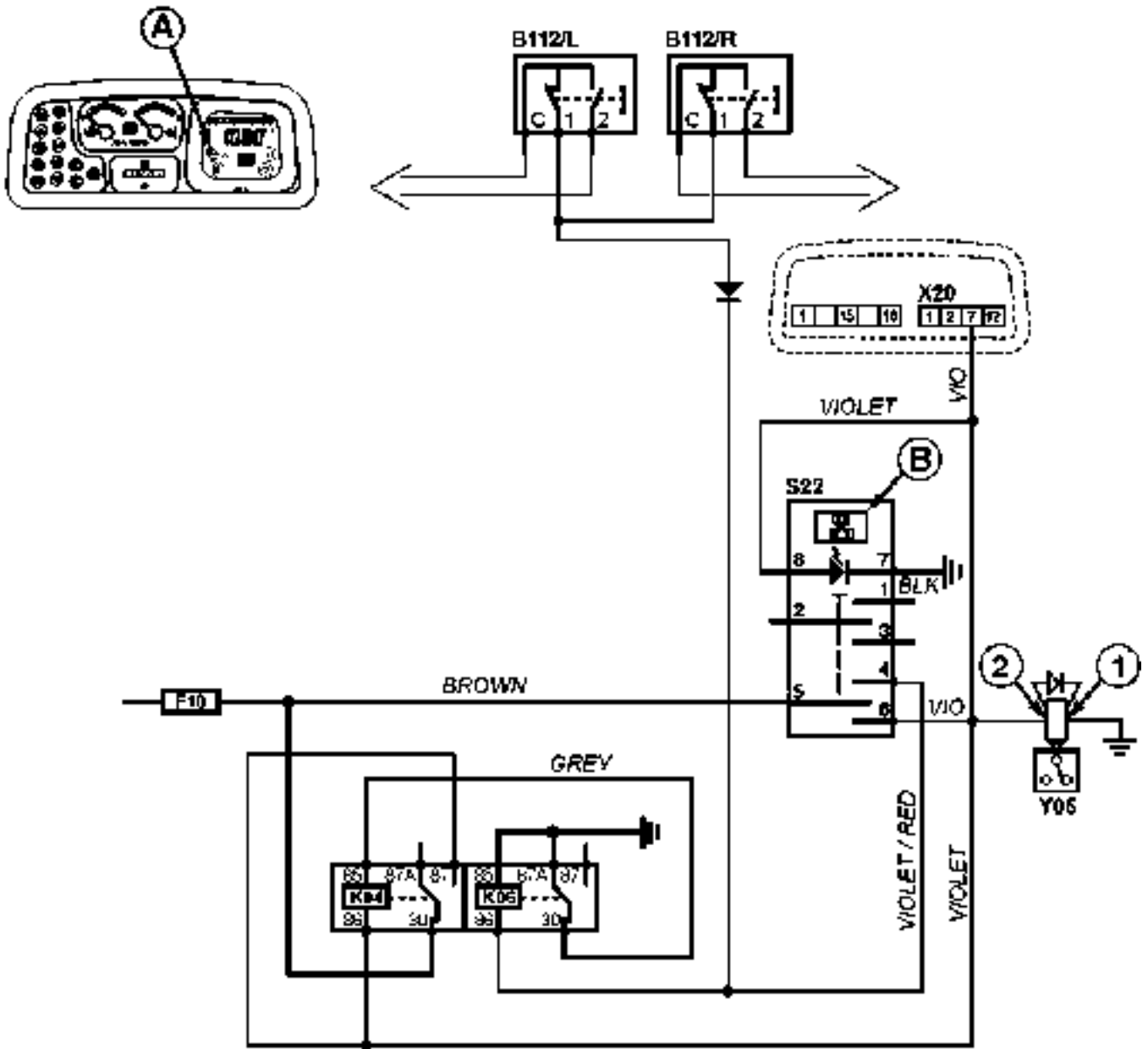
Check ground connection.

Result:

YES:Check parking brake switch. Repair or replace if it is necessary. END OF TEST.

NO:Check continuity to ground of black wire.

SE16C - Differential Lock Disengagement Solenoid Circuit Test



PULX000124

Differential lock circuit

LEGEND:

- A Differential lock indicator
- B Differential lock switch indicator
- B112/R Brake pedal switch (r.h. side)
- B112/L Brake pedal switch (l.h. side)
- F10 7.5 amp fuse
- K04 Differential lock relay (ON)
- K06 Differential lock relay (OFF)
- S23 Differential lock switch

X20 12-pin connector for instrument panel
Y05 Differential lock solenoid valve

Meet following requirements:

- Main switch in IGN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Differential Lock Disengagement Solenoid Circuit Test

(1) Check resistance at violet wire terminal 2 and black wire terminal 1 of 4-pin connector XY05

Action:

Location: [XY05 - 4-Pin Connector for Differential Lock Solenoid Valve Y05](#)

Coil resistance must be 8Ω.

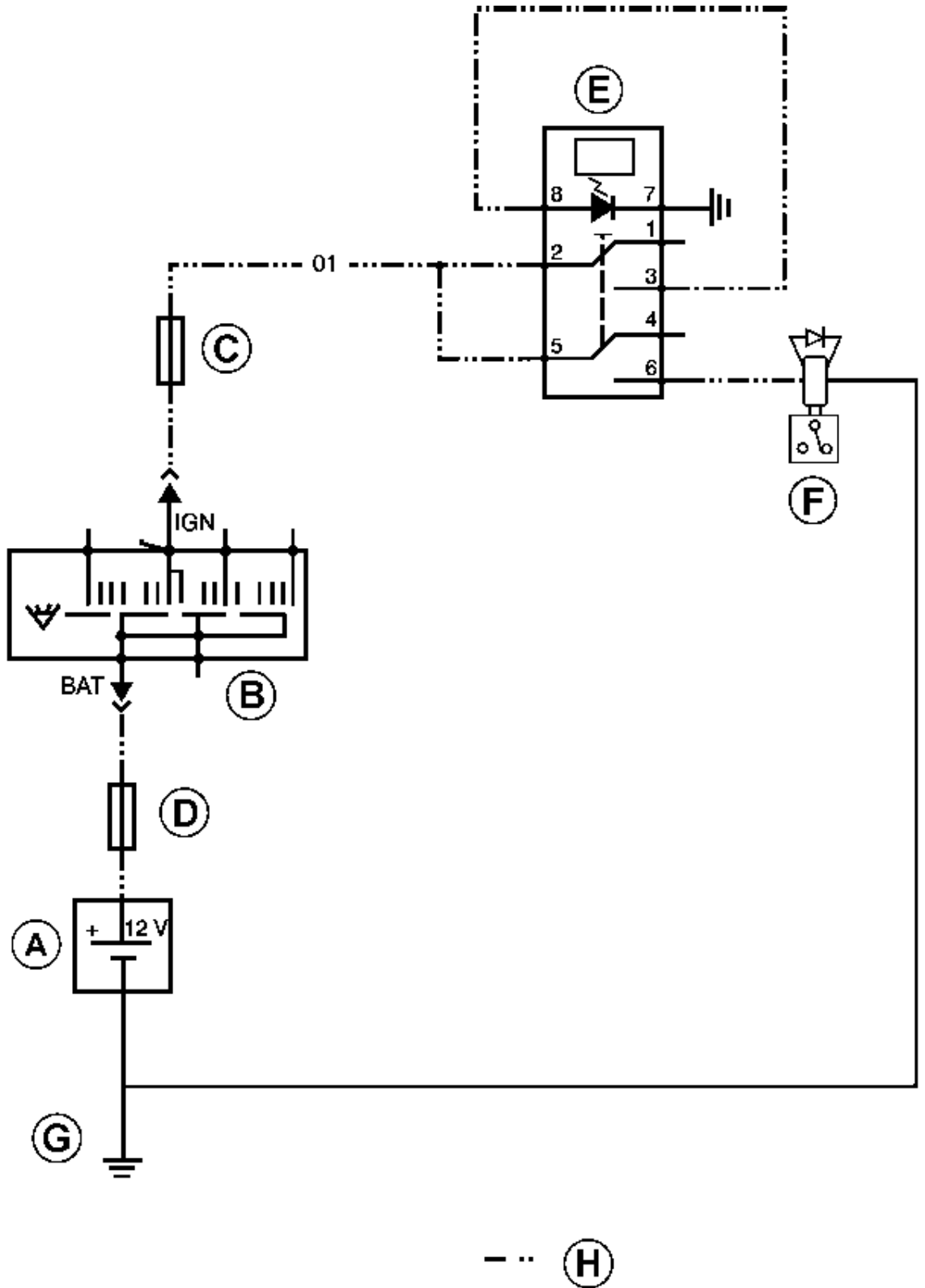
Result:

YES:Refer differential lock disengagement circuit and repair violet and black wires as necessary.

NO:Replace component [Y05 - Differential Lock Solenoid Valve](#).

Group S21 - SE21 - Flow Divider Valve

SE21 - Flow Divider Valve, Functional Schematic and Theory of Operation



AT16885

Flow divider valve circuit

LEGEND:

- A Battery G01
- B Main switch S01
- C Fuse F08, 7.5 amp
- D Main fuse F00, 50 amp
- E Reversal switch for allocation S22 (flow divider valve)
- F Flow divider solenoid valve Y23
- G Ground
- H Power circuit

Function

Permits to divert the oil flow respectively into the rockshaft circuit and/or into the hydraulic distributors.

Major Components

- Fuse F08, 7.5 amp
- Main fuse F00, 50 amp
- Reversal switch for allocation S22 (flow divider valve)
- Flow divider solenoid valve Y23

Theory of Operation

Current flows from battery G01 (A), through main fuse F00 (D) across closed contact of main switch S01 (B). Flow continues (circuit 01) through 7.5 amp fuse F08 (C) to reversal switch S22 (E). When operator pushes the switch S22, flow continues to flow divider solenoid valve Y23 (F).

Group S26A - SE26A - Electro-Hydraulic Management (EHM)

SE26A - Electro-Hydraulic Management (EHM) (Summary of References)

[SE26A - Electro-Hydraulic Management \(EHM\), Functional Schematic](#)

[SE26A - System Supply Voltage \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - Warning Light and Oil Filter Restriction Sensor \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - Ambient Temperature Sensor \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - High Range/Low Range Switch on Transmission \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - Transmission Oil Temperature Sensor and Calibration Switch \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - Front-Wheel Drive \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - Differential Lock \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - Clutch Pedal Switch \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - Clutch Pedal Potentiometer \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - Reverse Drive Lever \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - Hi-Lo Selection Switches \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - Reverse Clutch \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - Forward Low Clutch \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - Forward High Clutch \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - Declutch Switch on Range Shift Lever \(EHM\), Diagnostic Schematic and Circuit Test](#)

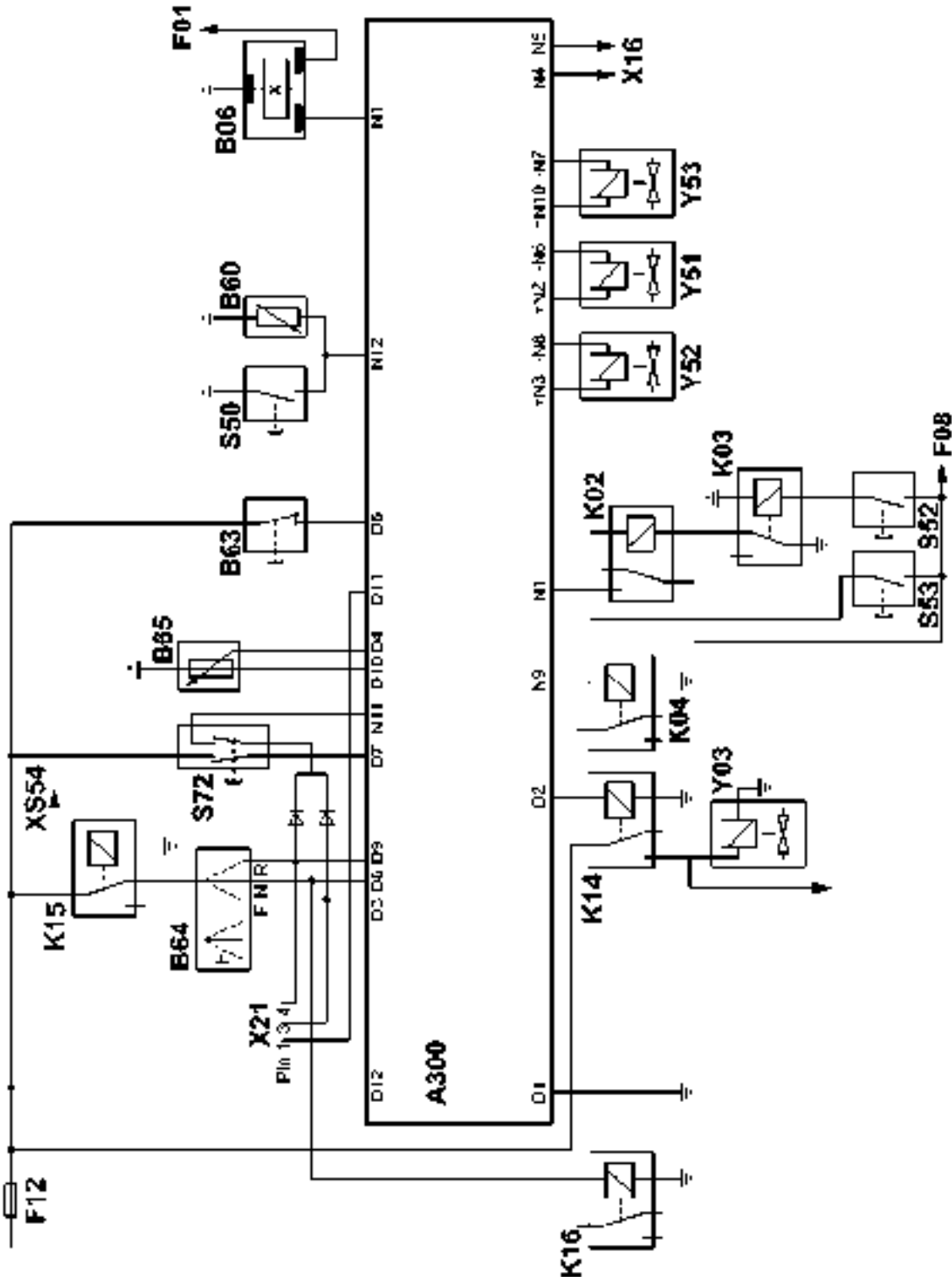
[SE26A - Shut-Off System \(EHM\), Functional Schematic and Theory of Operation](#)

[SE26A - Power Supply to Shut-Off System \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - Transmission Oil Pressure Sensors of Shut-Off System \(EHM\), Diagnostic Schematic and Circuit Test](#)

[SE26A - Shut-Off Solenoid Valve of Shut-Off System \(EHM\), Diagnostic Schematic and Circuit Test](#)

SE26A - Electro-Hydraulic Management (EHM), Functional Schematic



AT15811

EHM control unit

LEGEND:

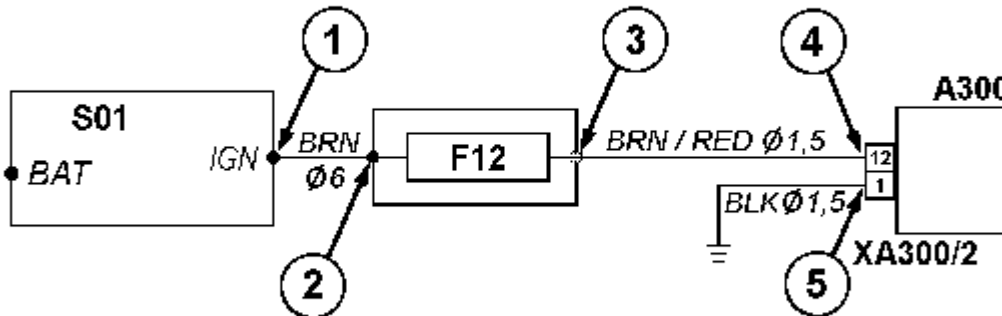
- A300 EHM control unit
- B06 Transmission speed sensor

B60	Transmission oil temperature sensor (EHM or EHM II)
B63	High range / low range switch on transmission (EHM or EHM II)
B64	Reverse drive lever switch (EHM or EHM II)
B65	Clutch pedal potentiometer (EHM or EHM II)
D1-D12	12-pin connector XA300/2 for EHM control unit A300 (grey)
F08	7.5 amp fuse
F12	15 amp fuse
K02	Hi-Lo relay (ON)
K03	Hi-Lo relay (OFF)
K04	Differential lock relay (ON)
K14	Front-wheel drive relay (EHM or EHM II)
K15	Declutch relay (EHM or EHM II)
K16	Neutral start relay (EHM or EHM II)
N1-N12	12-pin connector XA300/1 for EHM control unit A300 (black)
S50	Calibration switch (EHM or EHM II)
S52	Hi-Lo switch (low)
S53	Hi-Lo switch (high)
S72	Clutch pedal switch (EHM or EHM II)
X16	9-pin com-port for diagnostic connector (EHM or EHM II) to PC
X21	5-pin connector for instrument panel
XS54	1-pin connector for declutch switch S54 on range shift lever (EHM or EHM II)
Y03	Front-wheel drive solenoid valve
Y51	Reverse clutch solenoid valve (EHM or EHM II)
Y52	Forward low clutch solenoid valve (EHM or EHM II)
Y53	Forward high clutch solenoid valve (EHM or EHM II)

- [A300 - EHM Control Unit](#)
- [B06 - Transmission Speed Sensor](#)
- [B60 - Transmission Oil Temperature Sensor \(EHM or EHM II\)](#)
- [B63 - High Range/Low Range Switch on Transmission \(EHM or EHM II\)](#)
- [B64 - Reverse Drive Lever Switch \(EHM or EHM II\)](#)
- [B65 - Clutch Pedal Potentiometer \(EHM or EHM II\)](#)
- [F01 to F15 - Fuse Box](#)
- [K02 - Hi-Lo Relay \(ON\)](#)
- [K03 - Hi-Lo Relay \(OFF\)](#)
- [K04 - Differential Lock Relay \(ON\)](#)
- [K14 - Front-Wheel Drive Relay \(EHM or EHM II\)](#)
- [K15 - Declutch Relay \(EHM or EHM II\)](#)
- [K16 - Neutral Start Relay \(EHM or EHM II\)](#)
- [S50 - Calibration Switch \(EHM or EHM II\)](#)
- [S52 - Hi-Lo Switch \(low\)](#)
- [S53 - Hi-Lo Switch \(high\)](#)
- [S72 - Clutch Pedal Switch \(EHM or EHM II\)](#)
- [X16 - 9-Pin Com-Port for Diagnostic Connector \(EHM or EHM II\) to PC](#)

- [X21 - 5-Pin Connector for Instrument Panel](#)
- [XA300/1 - 12-Pin Connector for EHM Control Unit A300](#)
- [XA300/2 - 12-Pin Connector for EHM Control Unit A300](#)
- [XS54 - 1-Pin Connector for Declutch Switch S54 on Range Shift Lever \(EHM or EHM II\)](#)
- [Y03 - Front-Wheel Drive Solenoid Valve](#)
- [Y05 - Differential Lock Solenoid Valve](#)
- [Y51 - Reverse Clutch Solenoid Valve \(EHM or EHM II\)](#)
- [Y52 - Forward Low Clutch Solenoid Valve \(EHM or EHM II\)](#)
- [Y53 - Forward High Clutch Solenoid Valve \(EHM or EHM II\)](#)

SE26A - System Supply Voltage (EHM), Diagnostic Schematic and Circuit Test



AT15708

EHM supply voltage test points

LEGEND:

- 1 - 5 Test points
- A300 EHM control unit
- F12 15 amp fuse
- S01 Main switch
- XA300/2 12-pin connector (EHM)

Meet following requirements:

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Supply Voltage Test

(1) Check voltage at IGN terminal of main switch S01

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test .](#)

(2) Check voltage at fuse F12 input of fuse box

Action:

Location: XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken brown wire between main switch and fuse box.

(3) Check voltage at fuse F12 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for failed fuse F12. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at white/red wire at the 12-pin connector XA300/2 terminal 12 of the EHM control unit A300

Action:

Location: [XA300/2 - 12-Pin Connector for EHM Control Unit A300](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken white/red wire between fuse box and the EHM control unit A300.

(5) Check ground connection at black wire terminal 1 of 12-pin connector XA300/2 of the EHM control unit A300

Action:

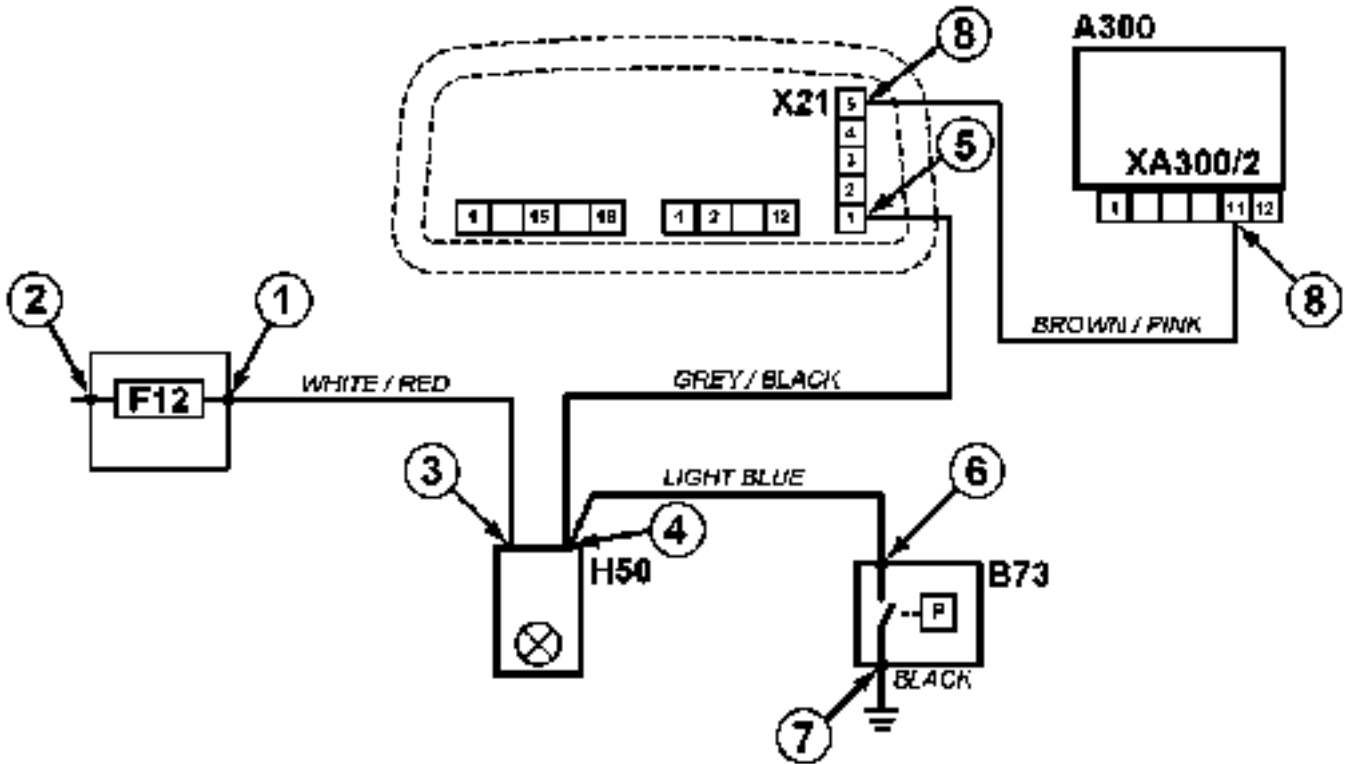
Check ground connection.

Result:

YES: END OF TEST.

NO: Check continuity to ground of black wire.

SE26A - Warning Light and Oil Filter Restriction Sensor (EHM), Diagnostic Schematic and Circuit Test



AT17353

Warning light circuit test

LEGEND:

- 1 - 8 Test points
- A300 EHM control unit
- B73 Oil filter restriction sensor (EHM or EHM II)
- F12 15 amp fuse
- H50 Warning light (EHM or EHM II)
- X21 5-pin connector for instrument panel
- XA300/2 12-pin connector (EHM)

Meet following requirements:

- Main switch in IGN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Warning Light and Oil Filter Restriction Sensor (EHM), Circuit Test

(1) Check voltage at F12 fuse output

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: [GO TO 2](#)

(2) Check voltage at F12 fuse input

Action:

Result must be same as battery voltage.

Result:

YES:Check fuse F12 and replace if necessary. If fuse is good, check for corroded or loose terminals. [GO TO 3](#)

NO:Perform " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) ".

(3) Check voltage at white/red wire terminal 2 of 2-pin connector XH50

Action:

Location: [XH50 - 2-Pin Connector for Warning Light H50 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO:Check for corroded connections or broken white/red wire between fuse F12 and 2-pin connector XH50.

(4) Check voltage at grey/black wire terminal 1 of 2-pin connector XH50

Action:

Disconnect " [X21 - 5-Pin Connector for Instrument Panel](#) " and " [XB73 - 2-Pin Connector for Oil Filter Restriction Sensor B73 \(EHM or EHM II\)](#) ".

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check " [H50 - Warning Light \(EHM or EHM II\)](#) " and replace if necessary. If bulb is good, check for corroded or loose terminals.

(5) Check voltage at grey/black wire terminal 1 of 5-pin connector X21 for instrument panel

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded connections or broken light blue/black wire between 2-pin connector XH50 and 5-pin connector X21.

(6) Check voltage at light blue wire terminal 1 of 2-pin connector XB73

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: Check for corroded connections or broken light blue wire between 2-pin connector XH50 and 2-pin connector XB73.

(7) Check ground connection at black wire terminal 2 of 2-pin connector XB73

Action:

7.1

Check ground connection.

Result:

YES:GO TO 7.2

NO:Check continuity to ground of black wire. [B73 - Oil Filter Restriction Sensor \(EHM or EHM II\)](#)

Action:

7.2

Connect " [XB73 - 2-Pin Connector for Oil Filter Restriction Sensor B73 \(EHM or EHM II\)](#) ".

" [H50 - Warning Light \(EHM or EHM II\)](#) " must not light up.

Result:

YES: [GO TO 8](#)

NO:Check " [B73 - Oil Filter Restriction Sensor \(EHM or EHM II\)](#) " and replace if necessary.

(8) Check continuity between brown/pink wire terminal 5 of 5-pin connector X21 and terminal 11 of 12-pin connector XA300/2

Action:

Location: [XA300/2 - 12-Pin Connector for EHM Control Unit A300](#)

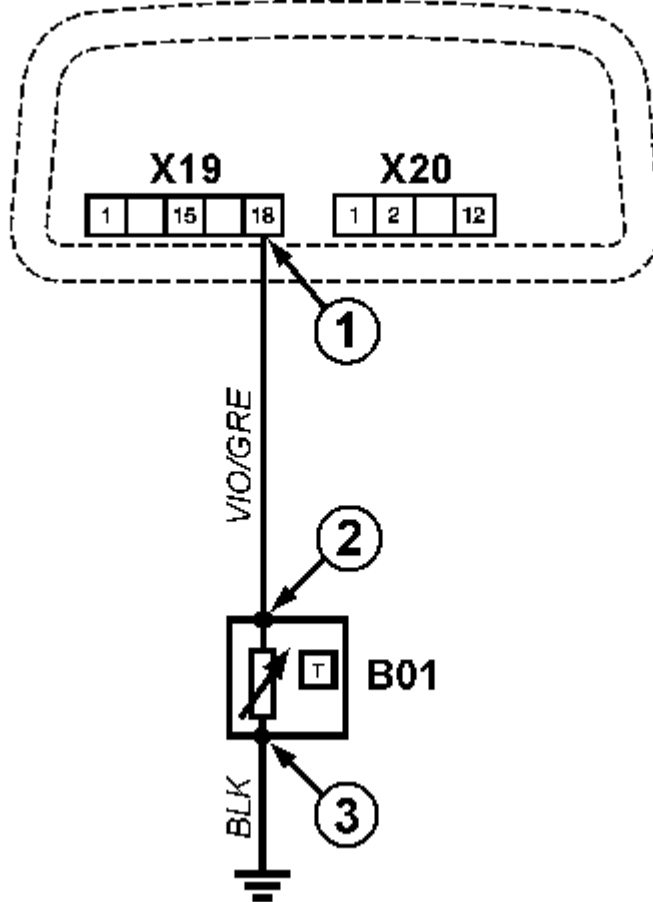
Continuity must be present.

Result:

YES:END OF TEST

NO:Check for corroded connections or broken brown/pink wire between terminal 1 of 5-pin connector X21 and terminal 11 of 12-pin connector XA300/2.

SE26A - Ambient Temperature Sensor (EHM), Diagnostic Schematic and Circuit Test



AT17352

Ambient temperature sensor circuit test

LEGEND:

- 1 - 3 Test points
- B01 Ambient temperature sensor (EHM or EHM II)
- X19 18-pin connector for instrument panel
- X20 12-pin connector for instrument panel

Meet following requirements:

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Ambient Temperature Sensor

(1) Check voltage at violet/green wire terminal 18 of 18-pin connector X19

Action:

Location: [X19 - 18-Pin Connector for Instrument Panel](#)

Disconnect " [B01 - Ambient Temperature Sensor \(EHM or EHM II\)](#) " .

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO:Check [SE02 - Power Supply to Instrument Panel, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at violet/green wire terminal 2 of 2-pin connector XB01

Action:

Location: [XB01 - 2-Pin Connector for Ambient Temperature Sensor B01 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO:Check for corroded connections or broken violet/green wire between 2-pin connector XB01 and 18-pin connector X19.

(3) Check ground connection at black wire terminal 1 of 2-pin connector XB01

Action:

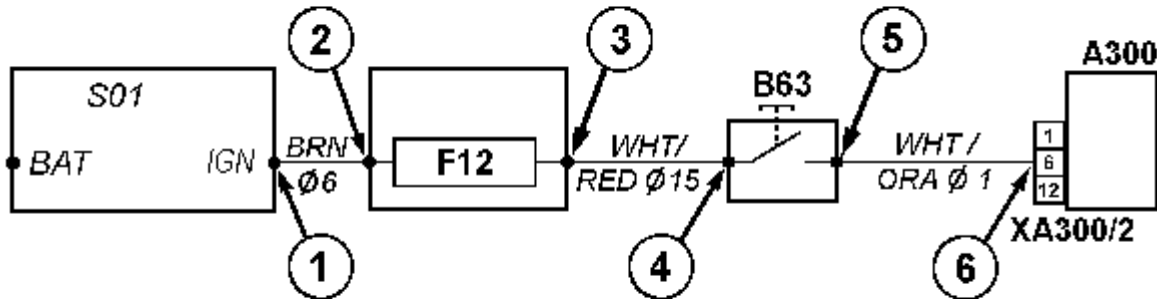
Check ground connection.

Result:

YES:Check " [B01 - Ambient Temperature Sensor \(EHM or EHM II\)](#) and replace if necessary.
END OF TEST.

NO:Check continuity to ground of black wire.

SE26A - High Range/Low Range Switch on Transmission (EHM), Diagnostic Schematic and Circuit Test



AT15710

High range/low range switch on transmission, test points

LEGEND:

- 1 - 6 Test points
- A300 EHM control unit
- B63 High range/low range switch on transmission (EHM or EHM II)
- F12 15 amp fuse
- S01 Main switch
- XA300/2 12-pin connector

Meet following requirements:

- Main switch in IGN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

High Range Input Test

(1) Check voltage at IGN terminal of main switch S01

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: Check " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) ".

(2) Check voltage at fuse F12 input of fuse box

Action:

Location: [F01 to F15 - Fuse Box](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or break in brown wire between main switch and fuse box.

(3) Check voltage at fuse F12 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for failed fuse F12. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at input of high range/low range switch B63 on transmission

Action:

Location: [XB63 - 2-Pin Connector for High Range/Low Range Switch B63 on Transmission \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

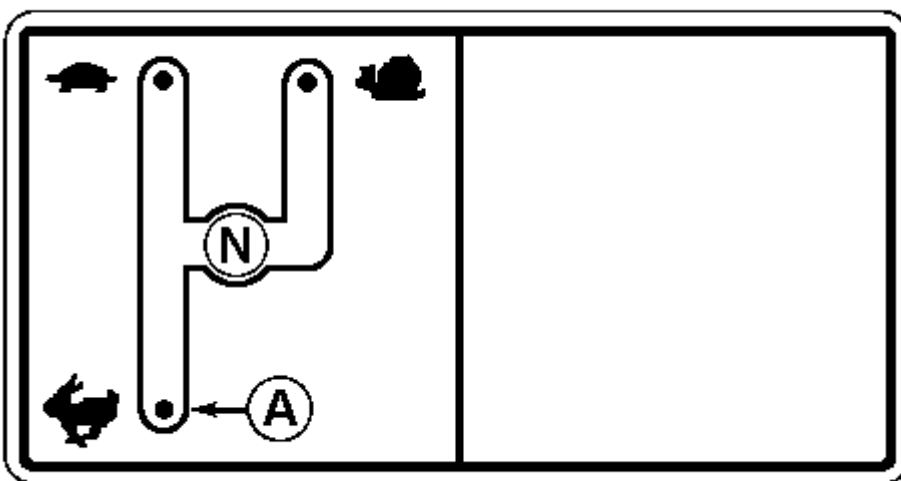
YES: [GO TO 5](#)

NO: Check for corroded connections or break in white/red wire between high range/low range switch B63 on transmission and fuse box.

(5) Check voltage at output of high range/low range switch B63 on transmission

Action:

Range shift lever in position (A).



AT17393

Decal

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check " [B63 - High Range/Low Range Switch on Transmission \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(6) Check voltage at white/orange wire terminal 6 at the 12-pin connector XA300/2

Action:

Location: [XA300/2 - 12-Pin Connector for EHM Control Unit A300](#)

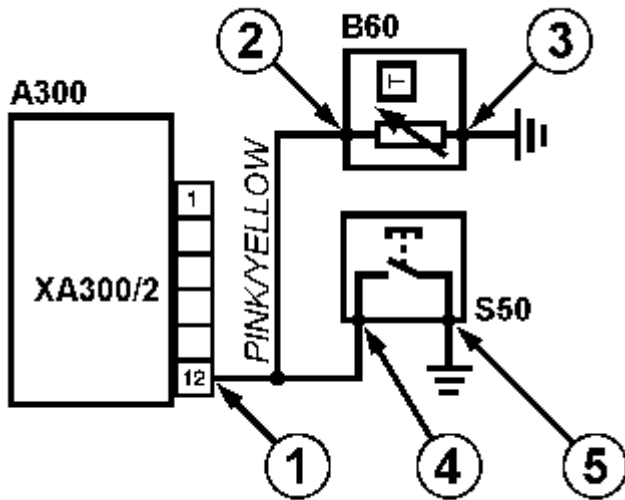
Result must be same as battery voltage.

Result:

YES:END OF TEST

NO:Check for corroded connections or break in white/orange wire between high range/low range switch on transmission and EHM.

SE26A - Transmission Oil Temperature Sensor and Calibration Switch (EHM), Diagnostic Schematic and Circuit Test



AT17360

Transmission oil temperature and calibration switch test points

LEGEND:

- 1 - 5 Test points
- A300 EHM control unit
- B60 Transmission oil temperature sensor (EHM or EHM II)
- S50 Calibration switch (EHM or EHM II)
- XA300/2 12-pin connector for EHM control unit A300

Meet following requirements:

- [A300 - EHM Control Unit](#) disconnected.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Transmission Oil Temperature Sensor and Calibration Switch Test

(1) Check resistance at pink/yellow wire terminal 12 of 12-pin connector XA300/2 of EHM control unit A300

Action:

Location: [XA300/2 - 12-Pin Connector for EHM Control Unit A300](#)

Check resistance between terminal 12 and ground connection.

Item	Measurement	Specification
B60 - Transmission Oil Temperature Sensor		
Resistance	at 20°C (68°F)	approx. 2500 ohms
	at 80°C (194°F)	approx. 330 ohms

Result:

YES: [GO TO 4](#)

NO: [GO TO 2.](#)

(2) Check resistance at pink/yellow wire terminal 1 of 2-pin connector XB60

Action:

Location: [XB60 - 2-Pin Connector for Transmission Oil Temperature Sensor B60 \(EHM or EHM II\)](#)

Check resistance between transmission oil temperature sensor B60 and ground connection.

Item	Measurement	Specification
B60 - Transmission Oil Temperature Sensor		
Resistance	at 20°C (68°F)	approx. 2500 ohms
	at 80°C (194°F)	approx. 330 ohms

Result:

YES: Check for corroded connections or broken pink/yellow wire between 2-pin connector XB60 and 12-pin connector XA300/2 of EHM control unit A300. [GO TO 4](#)

NO: [GO TO 3.](#)

(3) Check ground connection at black wire terminal 2 of 2-pin connector XB60

Action:

Check ground connection.

Result:

YES:Check " [B60 - Transmission Oil Temperature Sensor \(EHM or EHM II\)](#) " and replace if necessary. [GO TO 4](#)

NO:Check continuity to ground of black wire.

(4) Check resistance at pink/yellow wire terminal 1 of 2-pin connector XS50

Action:

4.1

Location: [XS50 - 2-Pin Connector for Calibration Switch S50 \(EHM or EHM II\)](#)

" [S50 - Calibration Switch \(EHM or EHM II\)](#) " not actuated.

Check resistance between 2-pin connector XS50 and ground connection.

Item	Measurement	Specification
B60 - Transmission Oil Temperature Sensor		
Resistance	at 20°C (68°F)	approx. 2500 ohms
	at 80°C (194°F)	approx. 330 ohms

Result:

YES:GO TO 4.2

NO:Check for corroded connections or broken pink/yellow wire between 2-pin connector XS50 and 12-pin connector XA300/2 of EHM control unit A300.

Action:

4.2

" [S50 - Calibration Switch \(EHM or EHM II\)](#) " actuated.

Check resistance between 2-pin connector XS50 and ground connection.

Item	Measurement	Specification
S50 - Calibration Switch (EHM)		
Resistance	actuated	0 ohms
	not actuated	same as resistance of B60

Result:

YES:END OF TEST

NO: [GO TO 5](#)

(5) Check ground connection at black wire terminal 2 of 2-pin connector XS50

Action:

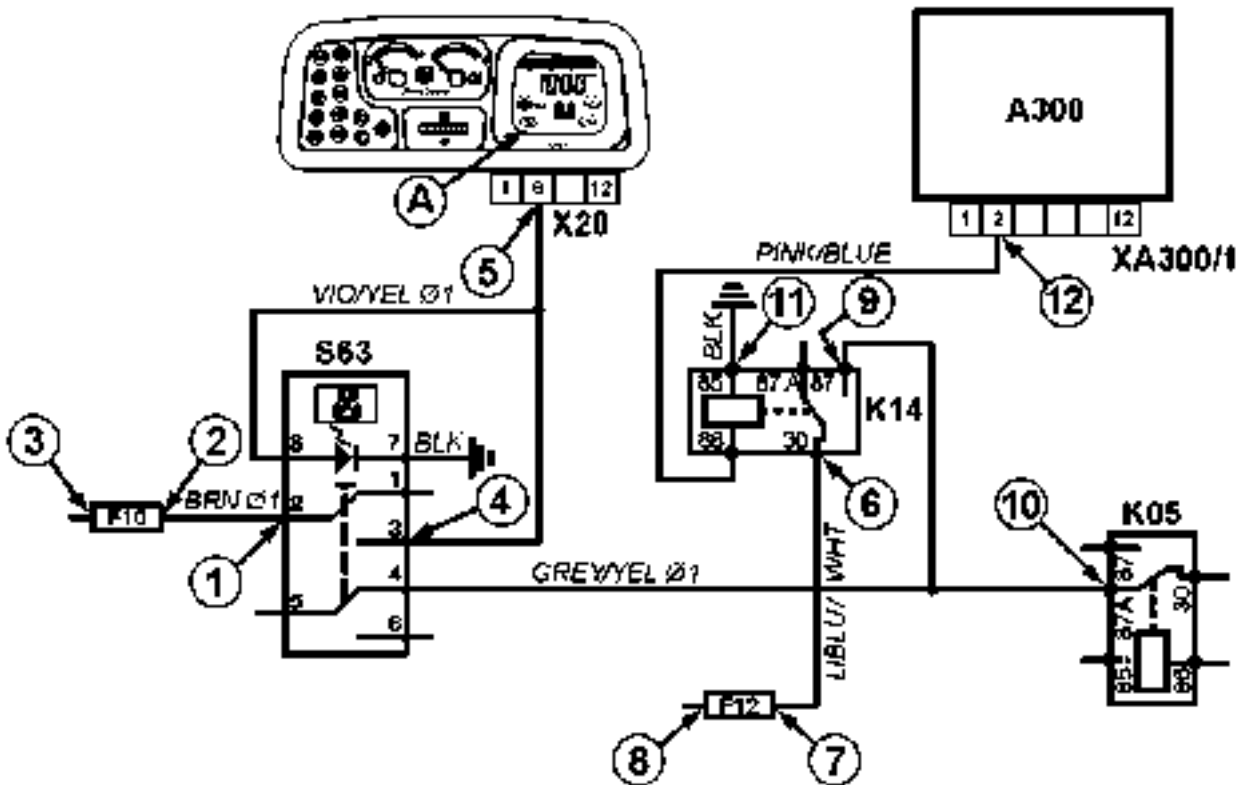
Check ground connection.

Result:

YES:Check " [S50 - Calibration Switch \(EHM or EHM II\)](#) " and replace if necessary.END OF TEST

NO:Check continuity to ground of black wire.

SE26A - Front-Wheel Drive (EHM), Diagnostic Schematic and Circuit Test



AT17354

Front-wheel drive circuit

LEGEND:

- 1 - 12 Test points
- A Front-wheel drive indicator light
- A300 EHM control unit
- F10 7.5 amp fuse
- F12 15 amp fuse
- K05 Front-wheel drive relay
- K14 Front-wheel drive relay (EHM or EHM II)
- S63 Front-wheel drive switch (EHM or EHM II)
- X20 12-pin connector for instrument panel
- XA300/1 12-pin connector for EHM control unit A300

Meet following requirements:

- Main switch in RUN (1) position.
- Gear shift lever in neutral position.
- PTO disengaged.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Front-Wheel Drive (EHM), Circuit Test

Problem with the front-wheel drive indicator light (A), [GO TO 1](#).

Problem with the automatic front-wheel drive shut-off (above 18 km/h; 11.2 mph), [GO TO 6](#).

(1) Check voltage at brown wire terminal 2 of front-wheel drive switch S63

Action:

Location: [XS63 - 10-Pin Connector for Front-Wheel Drive Switch S63 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: [GO TO 2](#)

(2) Check voltage at F10 fuse output

Action:

Location: XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: Check brown wire between front-wheel drive switch S63 and F10.

NO: [GO TO 3](#)

(3) Check voltage at F10 fuse input

Action:

Result must be same as battery voltage.

Result:

YES: Check fuse F10 and replace if necessary. If fuse is good, check for corroded or loose terminals.

NO: Perform " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) ".

(4) Check voltage at violet/yellow wire terminal 3 of front-wheel drive switch S63

Action:

" [S63 - Front-Wheel Drive Switch \(EHM or EHM II\)](#) " must be actuated.

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check " [S63 - Front-Wheel Drive Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(5) Check voltage at violet/yellow wire terminal 6 of 12-pin connector X20 of instrument panel

Action:

Location: [X20 - 12-Pin Connector for Instrument Panel](#)

" [S63 - Front-Wheel Drive Switch \(EHM or EHM II\)](#) " must be actuated.

Result must be same as battery voltage.

Result:

YES: Check for corroded or loose terminals. If connections are good, check instrument panel and replace if necessary. [GO TO 6](#)

NO: Check for corroded connections or broken violet/yellow wire between 12-pin connector X20 and front-wheel drive switch S63.

(6) Check voltage at light blue/white wire terminal 30 of relay K14

Action:

Location: [XK14 - 5-Pin Connector for Front-Wheel Drive Relay K14 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 9](#)

NO: [GO TO 7](#).

(7) Check voltage at F12 fuse output

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO:Check for corroded connections or broken light blue/white wire between relay K14 and fuse F12.

(8) Check voltage at F12 fuse input

Action:

Result must be same as battery voltage.

Result:

YES:Check fuse F12 and replace if necessary. If fuse is good, check for corroded or loose terminals. [GO TO 6](#).

NO:Perform " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) ". [GO TO 6](#)

(9) Check voltage at grey/yellow wire terminal 87 of relay K14

Action:

Front-wheel drive disengaged.

Result must be same as battery voltage.

Result:

YES: [GO TO 11](#)

NO: [GO TO 10](#)

(10) Check continuity between grey/yellow wire terminal 87 of relay K14 and terminal 87A of relay K05

Action:

Location: [XK05 - 5-Pin Connector for Front-Wheel Drive Relay](#)

Switch off main switch S01.

Continuity must be present.

Result:

YES:Check for corroded connections or broken grey/yellow wire between terminal 87 of relay K14 and terminal 4 of front-wheel drive switch S63. [GO TO 9](#)

NO:Check for corroded connections or broken grey/yellow wire between terminal 87A of relay K05 and terminal 87 of relay K14. [GO TO 9](#)

(11) Check ground connection at black wire terminal 85 of relay K14

Action:

Check ground connection.

Result:

YES: [GO TO 12](#)

NO:Check continuity to ground of black wire.

(12) Check continuity between pink/blue wire terminal 86 of relay K14 and terminal 2 of 12-pin connector XA300/1

Action:

Location: [XA300/1 - 12-Pin Connector for EHM Control Unit A300](#)

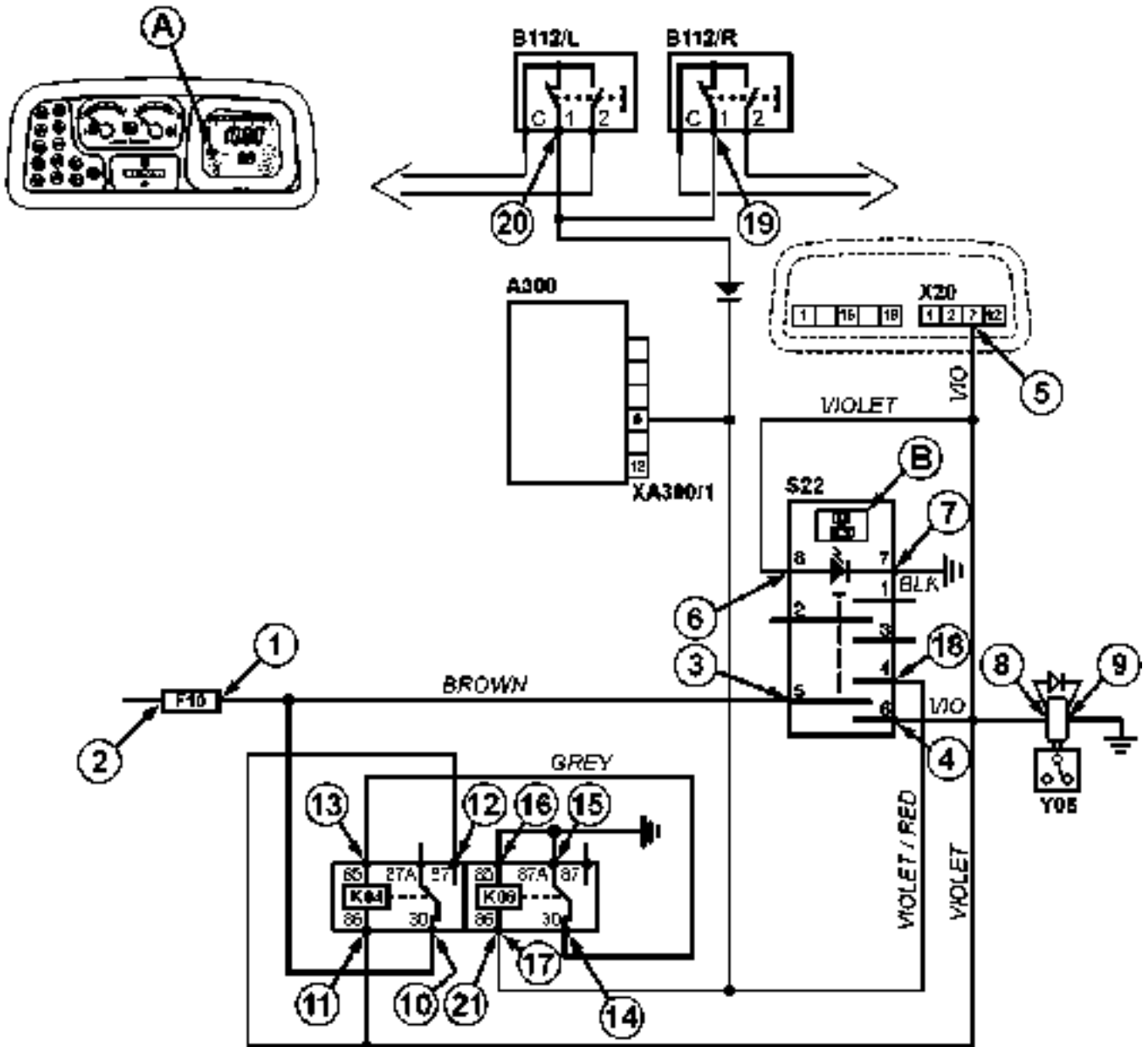
Continuity must be present.

Result:

YES: Check " [K14 - Front-Wheel Drive Relay \(EHM or EHM II\)](#) " and replace if necessary. If relay is good, check for corroded or loose terminals and check " [B06 - Transmission Speed Sensor](#) ".END OF TEST

NO: Check for corroded connections or broken pink/blue wire between terminal 86 of relay K14 and terminal 2 of 12-pin connector XA300/1.

SE26A - Differential Lock (EHM), Diagnostic Schematic and Circuit Test



AT17361

Differential lock circuit

LEGEND:

- 1 - 21 Test points
- A Differential lock indicator
- B Differential lock switch indicator
- A300 EHM control unit
- B112/L Brake pedal switch (l.h. side)
- B112/R Brake pedal switch (r.h. side)
- F10 7.5 amp fuse
- K04 Differential lock relay (ON)

K06	Differential lock relay (OFF)
S22	Differential lock switch
X20	12-pin connector for instrument panel
XA300/1	12-pin connector for EHM control unit A300
Y05	Differential lock solenoid valve

Meet following requirements:

- Main switch in IGN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Differential Lock Circuit Test

(1) Check voltage at fuse F10 output of fuse box

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: [GO TO 2](#)

(2) Check voltage at fuse F09 input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES:Check for failed fuse F10. If fuse is good, check for corroded or loose terminals. [GO TO 3](#)

NO:Perform " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) " .

(3) Check voltage at brown wire terminal 3 of 10-pin connector XS22

Action:

Location: [XS22 - 10-Pin Connector for Differential Lock Switch S22](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for corroded connections or broken brown wire between fuse F10 and 10-pin connector XS22.

(4) Check voltage at violet wire terminal 6 of 10-pin connector XS22

Action:

4.1

Press and hold "[S22 - Differential Lock Switch](#)" in **ON** position.

Result must be same as battery voltage.

Result:

YES: GO TO 4.2

NO: Check "[S22 - Differential Lock Switch](#)" and replace if necessary. If switch is good, check for corroded or loose terminals.

Action:

4.2

Press and hold "[S22 - Differential Lock Switch](#)" in **ON** position.

Differential lock indicator (A) lights up.

Result:

YES: GO TO 4.3

NO: [GO TO 5](#)

Action:

4.3

Press and hold " [S22 - Differential Lock Switch](#) " in **ON** position.

Differential lock switch indicator (B) lights up.

Result:

YES:GO TO 4.4

NO: [GO TO 6](#)

Action:

4.4

Press and hold " [S22 - Differential Lock Switch](#) " in **ON** position.

Differential lock indicator (A) lights up.

Result:

YES: [GO TO 8](#)

NO: [GO TO 10](#)

(5) Check voltage at violet wire terminal 7 of 12-pin connector X20

Action:

Location: [X20 - 12-Pin Connector for Instrument Panel](#)

Result must be same as battery voltage.

Result:

YES:Check " [SE02 - Power Supply to Instrument Panel, Diagnostic Schematic and Circuit Test](#) ". [GO TO 4](#)

NO:Check for corroded connections or broken violet wire between fuse F10 and 10-pin connector XS22.

(6) Check voltage at violet wire terminal 8 of 10-pin connector XS22

Action:

Location: [XS22 - 10-Pin Connector for Differential Lock Switch S22](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: Check for corroded connections or broken violet wire between terminal 6 and terminal 8 of 10-pin connector XS22.

(7) Check ground connection at black wire terminal 7 of 10-pin connector XS22

Action:

Check ground connection.

Result:

YES: If ground connection or wire is good, bulb or "[S22 - Differential Lock Switch](#)" is bad. Replace if necessary. [GO TO 8](#)

NO: Check continuity to ground of black wire. [GO TO 4](#)

(8) Check voltage at violet wire terminal 2 of 4-pin connector XY05

Action:

Location: [XY05 - 4-Pin Connector for Differential Lock Solenoid Valve Y05](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 9](#)

NO: Check for corroded connections or broken violet wire between 4-pin connector XY05 and 10-pin connector XS22.

(9) Check ground connection at black wire terminal 1 of 4-pin connector XY05

Action:

Check ground connection.

Result:

YES: Check " [Y05 - Differential Lock Solenoid Valve](#) " and replace if necessary. [GO TO 10](#)

NO: Check continuity to ground of black wire.

(10) Check voltage at brown wire terminal 30 of 5-pin connector XK06

Action:

Location: [XK06 - 5-Pin Connector for Differential Lock Relay \(OFF\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 11](#)

NO: Check for corroded connections or broken brown wire between 4-pin connector XY05 and 5-pin connector XK06.

(11) Check voltage at violet wire terminal 86 of 5-pin connector XK06

Action:

Press and hold " [S22 - Differential Lock Switch](#) " in **ON** position.

Result must be same as battery voltage.

Result:

YES: [GO TO 12](#)

OK: Check for corroded connections or broken violet wire between 5-pin connector XK06 and 10-pin connector XS22.

(12) Check voltage at violet wire terminal 87 of 5-pin connector XK06

Action:

Press and hold " [S22 - Differential Lock Switch](#) " in **ON** position.

Result must be same as battery voltage.

Result:

YES: [GO TO 13](#)

NO: Check for corroded connections or broken violet wire between terminal 87 and terminal 86 of 5-pin connector XK06.

(13) Check ground connection at grey wire terminal 85 of 5-pin connector XK06

Action:

Check ground connection.

Result:

YES: Check " [K06 - Differential Lock Relay \(OFF\)](#) " and replace if necessary.

NO: [GO TO 14](#)

(14) Check ground connection at grey wire terminal 30 of 5-pin connector XK04

Action:

Location: [XK04 - 5-Pin Connector for Differential Lock Relay \(ON\)](#)

Check ground connection.

Result:

YES: Check for corroded connections or broken grey wire between terminal 85 of 5-pin connector XK04 and terminal 30 of 5-pin connector XK06.

NO: [GO TO 15](#)

(15) Check ground connection at black wire terminal 87A of 5-pin connector XK04

Action:

Check ground connection.

Result:

YES: [GO TO 16](#)

NO: Check continuity to ground of black wire.

(16) Check ground connection at black wire terminal 85 of 5-pin connector XK04

Action:

Check ground connection.

Result:

YES: [GO TO 17](#)

NO: Check continuity to ground of black wire.

(17) Check voltage at violet/red wire terminal 86 of 5-pin connector XK04

Action:

17.1

→NOTE:

Do not depress the brake pedals.

Result must be 0 volt.

Result:

YES: GO TO 17.2

NO: [GO TO 21](#)

Action:

17.2

Press and hold "[S22 - Differential Lock Switch](#)" in **OFF** position.

Result must be same as battery voltage.

Result:

YES:GO TO 17.3

NO: [GO TO 18](#)

Action:

17.3

→NOTE:

Depress the r.h. brake pedal.

Result must be same as battery voltage.

Result:

YES:GO TO 17.4

NO: [GO TO 19](#)

Action:

17.4

→NOTE:

Depress the l.h. brake pedal.

Result must be same as battery voltage.

Result:

YES: Check " [K04 - Differential Lock Relay \(ON\)](#) " and replace if necessary. Perform " [24/12-Speed Transmission - Pressure Tests](#) ". See Section 251, Group 15. END OF TEST

NO: [GO TO 20](#)

(18) Check voltage at violet/red wire terminal 4 of 10-pin connector XS22

Action:

Location: [XS22 - 10-Pin Connector for Differential Lock Switch S22](#)

Press and hold " [S22 - Differential Lock Switch](#) " in **OFF** position.

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or broken violet/red wire between terminal 86 of 5-pin connector XK04 and terminal 4 of 10-pin connector XS22. [GO TO 17](#)

NO: Check " [S22 - Differential Lock Switch](#) " and replace if necessary. If switch is good, check for corroded or loose terminals. [GO TO 17](#)

(19) Check voltage at violet/red wire terminal XB112/R-1 of 3/1 pin connectors XB112/R

Action:

Location: [XB112 - 3/1-Pin Connectors for Brake Pedal Switches B112](#)

→NOTE:

Depress the r.h. brake pedal.

Result must be same as battery voltage.

Result:

YES:Check for corroded connections or broken violet/red wire between terminal XB112/R-1 of 3/1 pin connectors XB112/R and "[D101 - Differential Lock Diode](#)". Check for corroded connections or broken violet/red wire between "[D101 - Differential Lock Diode](#)" and terminal 86 of 5-pin connector XK06. [GO TO 17](#)

NO:Perform "[SE16C - Stop Lights, Diagnostic Schematic and Circuit Test](#)". [GO TO 17](#)

(20) Check voltage at violet/red wire terminal XB112/L-1 of 3/1 pin connectors XB112/L

Action:

→NOTE:

Depress the l.h. brake pedal.

Result must be same as battery voltage.

Result:

YES:Check for corroded connections or broken violet/red wire between terminal XB112/L-1 of 3/1 pin connectors XB112/L and "[D101 - Differential Lock Diode](#)". Check for corroded connections or broken violet/red wire between "[D101 - Differential Lock Diode](#)" and terminal 86 of 5-pin connector XK06. [GO TO 17](#)

NO:Perform "[SE16C - Stop Lights, Diagnostic Schematic and Circuit Test](#)". [GO TO 17](#)

(21) Check voltage at violet/red wire terminal 86 of 5-pin connector XK04

Action:

21.1

Disconnect "[XS22 - 10-Pin Connector for Differential Lock Switch S22](#)".

Result must be 0 volt.

Result:

YES:Check "[S22 - Differential Lock Switch](#)" and replace if necessary. If switch is good, check for corroded or loose terminals.

NO:GO TO 21.2

Action:

21.2

Disconnect "[XA300/1 - 12-Pin Connector for EHM Control Unit A300](#)".

Result must be 0 volt.

Result:

YES:Check "[A300 - EHM Control Unit](#)" and replace if necessary. Check for corroded or loose terminals.

NO:GO TO 21.3

Action:

21.3

Disconnect violet/red wire terminal XB112/R-1 of 3/1 pin connectors XB112/R. See "[XB112 - 3/1-Pin Connectors for Brake Pedal Switches B112](#)".

Result must be 0 volt.

Result:

YES:Check "[B112 - Brake Pedal Switches](#)" and replace if necessary. If switch is good, check for corroded or loose terminals.

NO:GO TO 21.4

Action:

21.4

Disconnect violet/red wire terminal XB112/L-1 of 3/1 pin connectors XB112/L. See "[XB112 - 3/1-Pin Connectors for Brake Pedal Switches B112](#)".

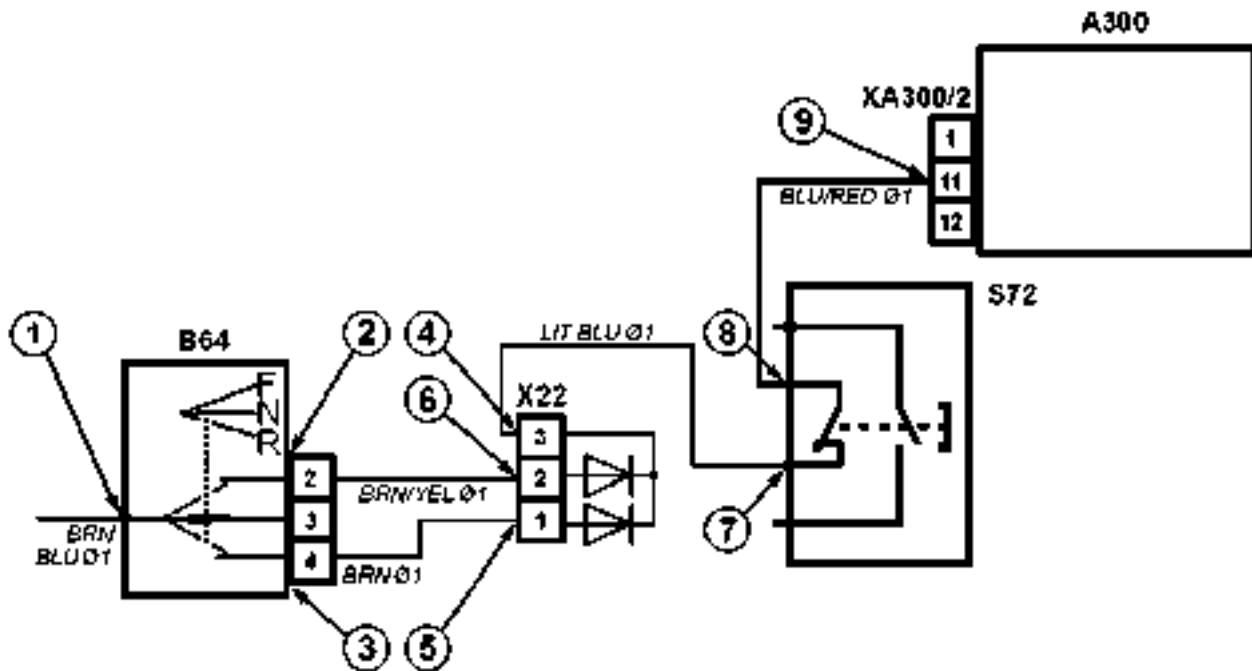
Result must be 0 volt.

Result:

YES: Check "[B112 - Brake Pedal Switches](#)" and replace if necessary. If switch is good, check for corroded or loose terminals.

NO: Check violet/red wire for short to 12 volts. END OF TEST

SE26A - Clutch Pedal Switch (EHM), Diagnostic Schematic and Circuit Test



AT17335

Clutch pedal switch test points

LEGEND:

- 1 - 9 Test points
- A300 EHM control unit
- B64 Reverse drive lever switch (EHM or EHM II)
- S72 Clutch pedal switch (EHM or EHM II)
- X22 3-pin connector for diodes
- XA300/2 12-pin connector for EHM control unit A300

Meet following requirements:

- Main switch in IGN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Clutch Pedal Switch Test

(1) Check voltage at brown/blue wire terminal of reverse drive lever switch B64

Action:

Location: [XB64 - 4-Pin Connector for Reverse Drive Lever Switch B64 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: Check " [SE26A - Reverse Drive Lever \(EHM\), Diagnostic Schematic and Circuit Test](#) ".

(2) Check voltage at brown/yellow wire terminal of reverse drive lever switch B64

Action:

Put reverse drive lever in forward position.

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check " [B64 - Reverse Drive Lever Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(3) Check voltage at brown wire terminal of reverse drive lever switch B64

Action:

Put reverse drive lever in reverse position.

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check " [B64 - Reverse Drive Lever Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(4) Check voltage at brown/yellow wire terminal 2 of 3-pin connector X22

Action:

Location: [X22 - 3-Pin Connector for Diodes](#)

Put reverse drive lever in forward position.

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check for corroded connections or broken brown/yellow wire between reverse drive lever switch and X22.

(5) Check voltage at brown wire terminal 1 of 3-pin connector X22

Action:

Put reverse drive lever in reverse position.

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded connections or broken brown wire between reverse drive lever switch and X22.

(6) Check voltage at light blue wire terminal 3 of 3-pin connector X22

Action:

6.1

Put reverse drive lever in reverse position.

Result must be same as battery voltage.

Result:

YES:GO TO 6.2

NO:Check diode between terminal 1 and 3. Replace if necessary

Action:

6.2

Put reverse drive lever in forward position.

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO:Check diode between terminal 2 and 3. Replace if necessary

(7) Check voltage at light blue wire terminal of clutch pedal switch S72

Action:

Location: [XS72 - 4/1-Pin Connectors for Clutch Pedal Switch S72 \(EHM or EHM II\)](#)

Put reverse drive lever in reverse position.

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO:Check for corroded connections or broken light blue wire between X22 and clutch pedal switch S72.

(8) Check voltage at blue/red wire terminal of clutch pedal switch S72

Action:

8.1

Put reverse drive lever in reverse position without depressing the clutch pedal.

Result must be same as battery voltage.

Result:

YES:GO TO 8.2

NO:Check " [S72 - Clutch Pedal Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

Action:

8.2

Put reverse drive lever in reverse position with depressing the clutch pedal.

Result must be 0 volt.

Result:

YES: [GO TO 9](#)

NO:Check " [S72 - Clutch Pedal Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(9) Check voltage at blue/red wire terminal 11 of connector XA300/2 for EHM control unit

Action:

Location: [XA300/2 - 12-Pin Connector for EHM Control Unit A300](#)

Put reverse drive lever in reverse position.

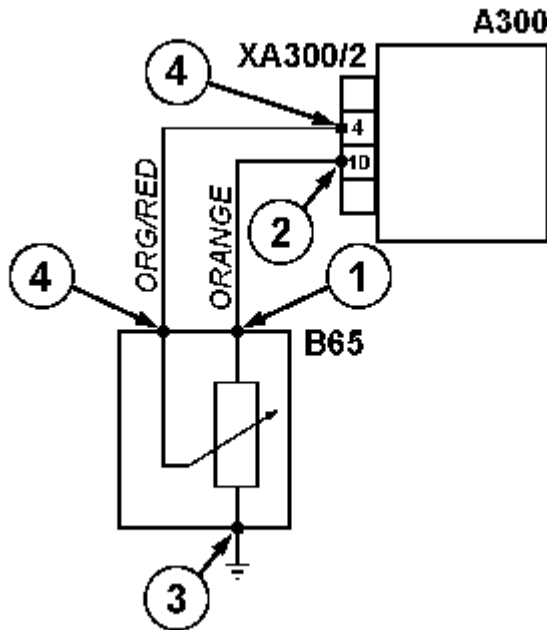
Result must be same as battery voltage.

Result:

YES:END OF TEST

NO:Check for corroded connections or broken blue/red wire between XA300/2 and clutch pedal switch S72.

SE26A - Clutch Pedal Potentiometer (EHM), Diagnostic Schematic and Circuit Test



AT15727

Clutch pedal potentiometer B65

LEGEND:

- 1 - 4 Test points
- A300 EHM control unit
- B65 Clutch pedal potentiometer (EHM or EHM II)
- XA300/2 12-pin connector for EHM control unit A300

Meet following requirements:

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Clutch Pedal Potentiometer Test

(1) Check voltage at orange wire terminal 4 of 6-pin connector XB65

Action:

Location: [XB65 - 6-Pin Connector for Clutch Pedal Potentiometer B65 \(EHM or EHM II\)](#)

Result must be between 4.75 - 5.25 volts.

Result:

YES: [GO TO 3.](#)

NO: [GO TO 2.](#)

(2) Check voltage at orange wire terminal 10 of 12-pin connector XA300/2

Action:

Location: [XA300/2 - 12-Pin Connector for EHM Control Unit A300](#)

Result must be between 4.75 - 5.25 volts.

Result:

YES: Check for corroded connections or broken wire between 12-pin connector XA300/2 and 6-pin connector XB65.

NO: Check " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) ".

(3) Check ground connection at black wire terminal 2 of 6-pin connector XB65

Action:

Check ground connection.

Result:

YES: [GO TO 4.](#)

NO: Check continuity to ground of black wire.

(4) Check continuity at orange/red wire between terminal 4 of 12-pin connector XA300/2 and terminal 1 of 6-pin connector XB65

Action:

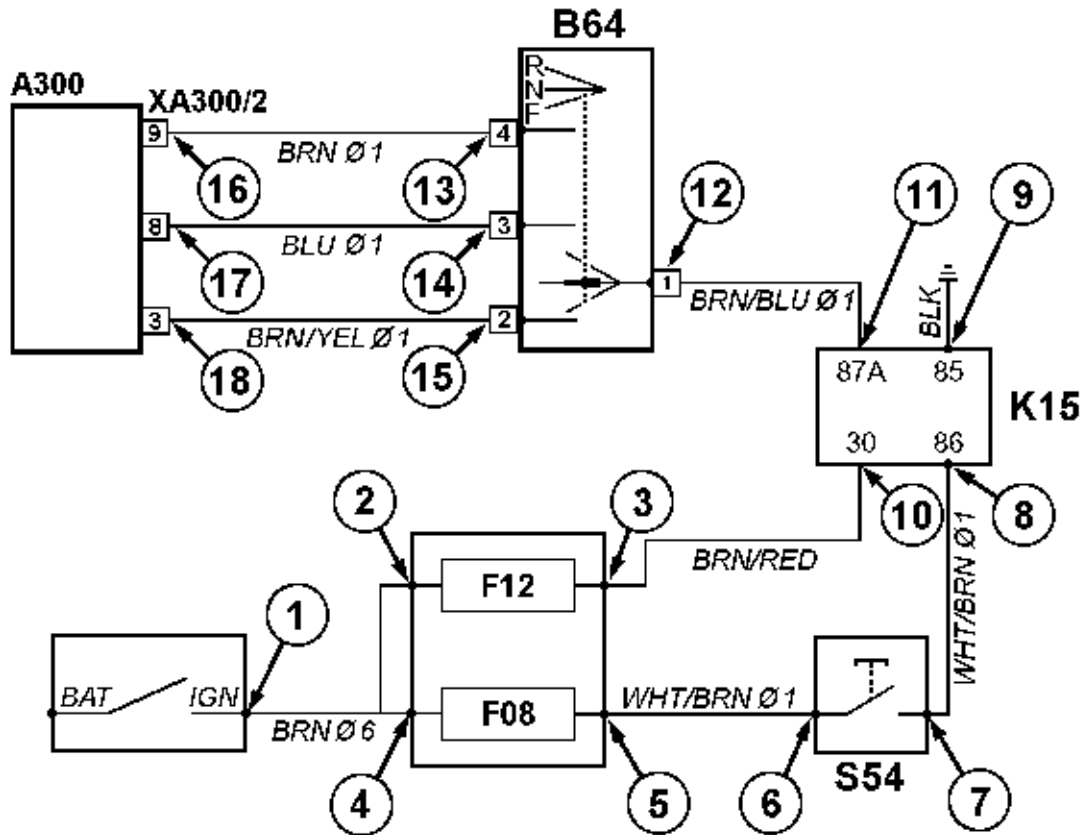
Continuity must be present.

Result:

YES: Check " [B65 - Clutch Pedal Potentiometer \(EHM or EHM II\)](#) " and replace if necessary.
END OF TEST.

NO: Check for corroded connections or broken wire between 12-pin connector XA300/2 and 6-pin connector XB65.

SE26A - Reverse Drive Lever (EHM), Diagnostic Schematic and Circuit Test



AT15709

Reverser drive lever test points

LEGEND:

- 1 - 18 Test points
- A300 EHM control unit
- B64 Reverse drive lever switch (EHM or EHM II)
- F08 7.5 amp fuse
- F12 15 amp fuse
- K15 Declutch relay (EHM or EHM II)
- S01 Main switch
- S54 Declutch switch on range shift lever
- XA300/2 12-pin connector for EHM control unit A300

Meet following requirements:

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Reverse Drive Lever Test

(1) Check voltage at IGN terminal of main switch S01

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test .](#)

(2) Check voltage at fuse F12 input of fuse box

Action:

Location: XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken brown wire between main switch and fuse box.

(3) Check voltage at fuse F12 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for failed fuse F12. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at fuse F08 input of fuse box

Action:

Location: XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken brown wire between main switch and fuse box.

(5) Check voltage at fuse F08 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6.](#)

NO: Check for failed fuse F08. If fuse is good, check for corroded or loose terminals.

(6) Check voltage at input of declutch switch S54 on range shift lever

Action:

Location: [XS54 - 1-Pin Connector for Declutch Switch S54 on Range Shift Lever \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 7.](#)

NO: Check for corroded connections or broken white/brown wire between declutch switch on range shift lever and fuse box.

(7) Check voltage at output of declutch switch S54 on range shift lever

Action:

Location: [S54 - Declutch Switch on Range Shift Lever \(EHM or EHM II\)](#)

Press and hold declutch switch on range shift lever.

Result must be same as battery voltage.

Result:

YES: [GO TO 8.](#)

NO: Check for failed " [S54 - Declutch Switch on Range Shift Lever \(EHM or EHM II\)](#) ". If declutch switch is good, check for corroded or loose terminals.

(8) Check voltage at white/brown wire terminal 86 of relay K15

Action:

Location: [XK15 - 5-Pin Connector for Declutch Relay K15 \(EHM or EHM II\)](#)

Press and hold declutch switch on range shift lever.

Result must be same as battery voltage.

Result:

YES: [GO TO 9.](#)

NO: Check for corroded connections or broken white/brown wire between declutch switch on range shift lever and relay K15.

(9) Check ground connection at terminal 85 of relay K15

Action:

Check ground connection.

Result:

YES: Check relay K15 and replace if necessary. If relay is good, check for corroded or loose terminals. [GO TO 10.](#)

NO: Check ground connection on terminal 85 black wire.

(10) Check voltage at brown/red wire terminal 30 of relay K15

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 11.](#)

NO: Check for corroded connections or broken brown/red wire between fuse box and relay K15.

(11) Check voltage at brown/blue wire terminal 87A of relay K15

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 12.](#)

NO: Check " [K15 - Declutch Relay \(EHM or EHM II\)](#) " and replace if necessary. If relay is good, check for corroded or loose terminals.

(12) Check voltage at brown/blue wire terminal 1 of 4-pin connector XB64

Action:

Location: [XB64 - 4-Pin Connector for Reverse Drive Lever Switch B64 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 13.](#)

NO: Check for corroded connections or broken brown/blue wire between reverse drive lever switch and relay K15.

(13) Check voltage at brown wire terminal 4 of 4-pin connector XB64

Action:

Put reverse drive lever in reverse position.

Result must be same as battery voltage.

Result:

YES: [GO TO 14.](#)

NO: Check reverse drive lever switch and replace switch if necessary. If switch is good, check for corroded or loose terminals.

(14) Check voltage at blue wire terminal 3 of 4-pin connector XB64

Action:

Put reverse drive lever in neutral position.

Result must be same as battery voltage.

Result:

YES: [GO TO 15.](#)

NO: Check " [B64 - Reverse Drive Lever Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(15) Check voltage at brown/yellow wire terminal 2 of 4-pin connector XB64

Action:

Put reverse drive lever in forward position.

Result must be same as battery voltage.

Result:

YES: [GO TO 16.](#)

NO: Check " [B64 - Reverse Drive Lever Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(16) Check voltage at brown wire terminal 9 of 12-pin connector XA300/2 of EHM

Action:

Location: [XA300/2 - 12-Pin Connector for EHM Control Unit A300](#)

Put reverse drive lever in reverse position.

Result must be same as battery voltage.

Result:

YES: [GO TO 17.](#)

NO: Check for corroded connections or broken brown wire between reverse drive lever switch and EHM.

(17) Check voltage at blue wire terminal 8 of 12-pin connector XA300/2 of EHM

Action:

Put reverse drive lever in neutral position.

Result must be same as battery voltage.

Result:

YES: [GO TO 18.](#)

NO: Check for corroded connections or broken blue wire between reverse drive lever switch and EHM.

(18) Check voltage at brown/yellow wire terminal 3 of 12-pin connector XA300/2 of EHM

Action:

Put reverse drive lever in forward position.

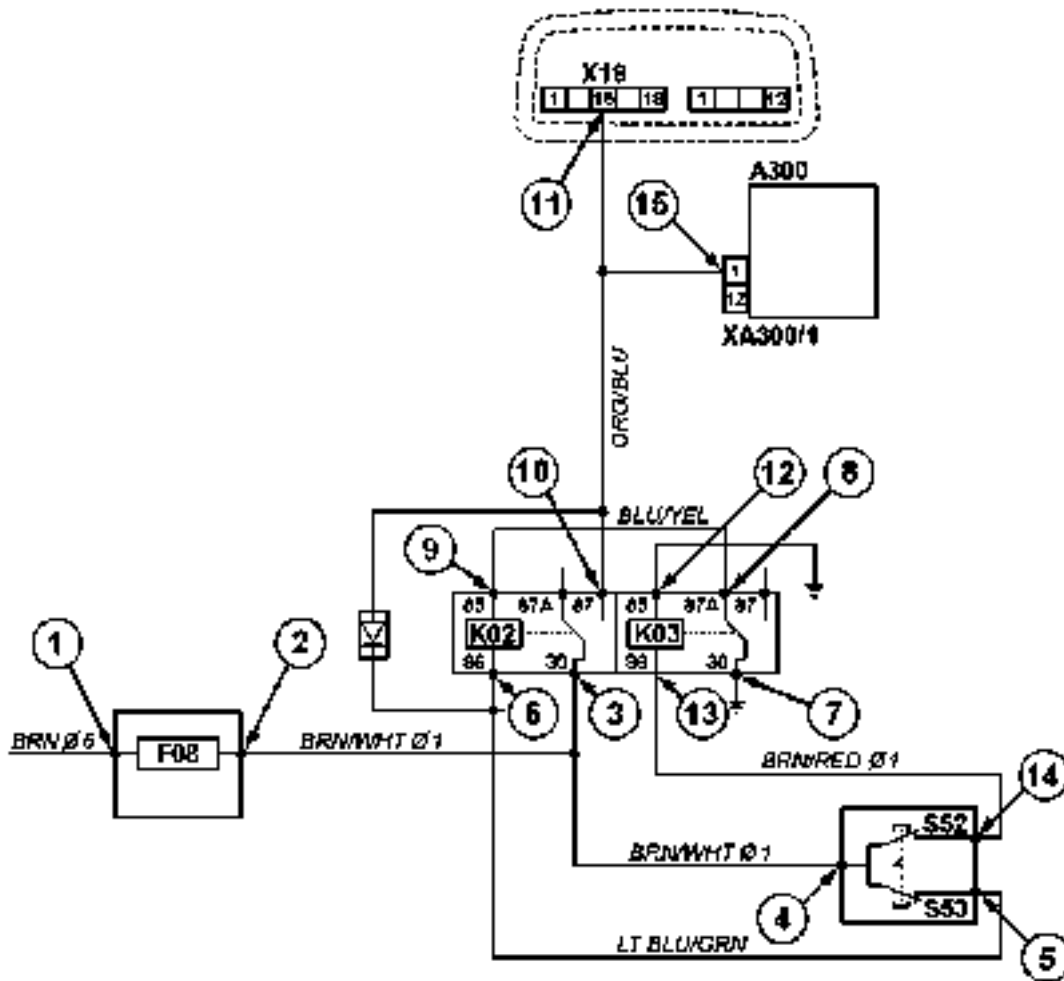
Result must be same as battery voltage.

Result:

YES: END OF TEST.

NO: Check for corroded connections or broken brown/yellow wire between reverse drive lever switch and EHM control unit.

SE26A - Hi-Lo Selection Switches (EHM), Diagnostic Schematic and Circuit Test



AT15711

Hi-Lo selection switches test points

LEGEND:

- 1 - 15 Test points
- A300 EHM control unit
- F08 7.5 amp fuse
- K02 Hi-Lo relay (ON)
- K03 Hi-Lo relay (OFF)
- S52 Hi-Lo switch (low)
- S53 Hi-Lo switch (high)
- X19 18-pin connector for instrument panel
- XA300/1 12-pin connector for EHM control unit A300

Meet following requirements:

- Main switch in RUN (1) position.
- Hi-Lo switch in "Hi" position.

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Hi-Lo Circuit Test

(1) Check voltage at fuse F08 input of fuse box

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO:Check for corroded connections or broken brown wire between main switch and fuse box.If wire is good, check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at fuse F08 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO:Check for failed fuse F08. If fuse is good, check for corroded or loose terminals.

(3) Check voltage at brown/white wire terminal 30 of relay K02

Action:

Location: [XK02 - 5-Pin Connector for Hi-Lo Relay \(ON\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for corroded connections or broken brown/white wire between fuse box and relay K02.

(4) Check voltage at brown/white wire terminal 2 of 3-pin connector X23

Action:

Location: [X23 - 3-Pin Connector for Hi-Lo Switches \(S53 and S52\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check for corroded connections or broken brown/white wire between fuse box and terminal 2 of 3-pin connector X23.

(5) Check voltage at light blue/green wire terminal 3 of 3-pin connector X23

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded or loose terminals. Replace "[S53 - Hi-Lo Switch \(high\)](#)" if necessary.

(6) Check voltage at light blue/green wire terminal 86 of relay K02

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: Check for corroded connections or broken light blue/green wire between relay K02 and 3-pin connector X23.

(7) Check ground connection at black wire terminal 30 of relay K03

Action:

Location: [XK03 - 5-Pin Connector for Hi-Lo Relay \(OFF\)](#)

Check ground connection.

Result:

YES: [GO TO 8](#)

NO: Check continuity to ground of black wire.

(8) Check ground connection at blue/yellow wire terminal 87A of relay K03

Action:

Check ground connection.

Result:

YES: [GO TO 9](#)

NO: Check for failed " [K03 - Hi-Lo Relay \(OFF\)](#) ". Replace relay if it is failed. If relay is good, check for corroded or loose terminals.

(9) Check ground connection at blue/yellow wire terminal 85 of relay K02

Action:

Check ground connection.

Result:

YES: [GO TO 10](#)

NO: Check for corroded connections or broken blue/yellow wire between relay K02 and relay K03.

(10) Check voltage at orange/blue wire terminal 87 of relay K02

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 11](#)

NO: Check for failed " [K02 - Hi-Lo Relay \(ON\)](#) ". Replace relay if it is failed. If relay is good, check for corroded or loose terminals.

(11) Check voltage at orange/blue wire terminal 15 of 18-pin instrument panel connector X19

Action:

Location: [X19 - 18-Pin Connector for Instrument Panel](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 14](#)

NO: Check for corroded connections or broken orange/blue wire between instrument panel and relay K02.

(12) Check ground connection at black wire terminal 85 of relay K03

Action:

Check ground connection.

Result:

YES: [GO TO 15](#)

NO: Check continuity to ground of black wire.

(13) Check ground connection at red/brown wire terminal 86 of relay K03

Action:

Check ground connection.

Result:

YES: [GO TO 14](#)

NO: Check " [K03 - Hi-Lo Relay \(OFF\)](#) " and replace if necessary. If relay is good, check for corroded or loose terminals.

(14) Check ground connection at red/brown wire terminal 1 of 3-pin connector X23

Action:

Location: [X23 - 3-Pin Connector for Hi-Lo Switches \(S53 and S52\)](#)

Check ground connection.

Result:

YES: [GO TO 15](#)

NO: Check for corroded connections or broken red/brown wire between 3-pin connector X23 and relay K03.

(15) Check voltage at orange/blue wire terminal 1 of 12-pin connector XA300/1 of EHM control unit A300

Action:

Location: [XA300/1 - 12-Pin Connector for EHM Control Unit A300](#)

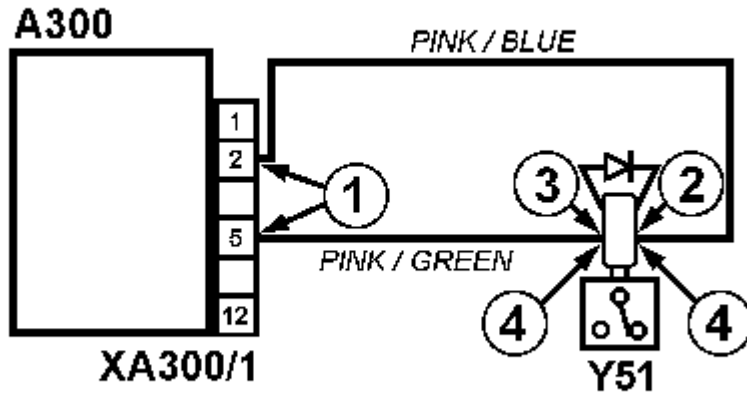
Result must be same as battery voltage.

Result:

YES: Perform " [24/12-Speed Transmission - Pressure Tests](#) ". See Section 251, Group 15.END OF TEST.

NO: Check for corroded connections or broken orange/blue wire between EHM and relay K02.

SE26A - Reverse Clutch (EHM), Diagnostic Schematic and Circuit Test



AT17357

Reverse clutch circuit test

LEGEND:

- 1 - 4 Test points
- A300 EHM control unit
- XA300/1 12-pin connector for EHM control unit
- Y51 Reverse clutch solenoid valve (EHM or EHM II)

Meet following requirements:

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Reverse Clutch Solenoid Valve Circuit Test

(1) Check resistance between pink/blue wire terminal 2 and pink/green wire terminal 5 of 12-pin connector XA300/1

Action:

Location: [XA300/1 - 12-Pin Connector for EHM Control Unit A300](#)

Item	Measurement	Specification
Proportional valve		
Solenoid valve:	Resistance	approx. 2.2 ohms

Result:

YES: [GO TO 4](#)

NO: [GO TO 2](#)

(2) Check continuity between pink/blue wire terminal 2 of 12-pin connector XA300/1 and pink/blue wire terminal 1 of 2-pin connector XY51

Action:

Location: [XY51 - 2-Pin Connector for Reverse Clutch Solenoid Valve Y51 \(EHM or EHM II\)](#)

Continuity must be present.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken pink/blue wire between connectors XA300/1 and XY51.

(3) Check continuity between pink/green wire terminal 5 of 12-pin connector XA300/1 and pink/green wire terminal 2 of 2-pin connector XY51

Action:

Continuity must be present.

Result:

YES: Check " [Y51 - Reverse Clutch Solenoid Valve \(EHM or EHM II\)](#) " and replace if necessary.
[GO TO 4](#)

NO: Check for corroded connections or broken pink/green wire between connectors XA300/1 and XY51.

(4) Check continuity between pink/blue wire terminal 1 and pink/green wire terminal 2 of 2-pin connector XY51

Action:

Main switch in IGN position.

Parking brake engaged.

Reverse drive lever in reverse position.

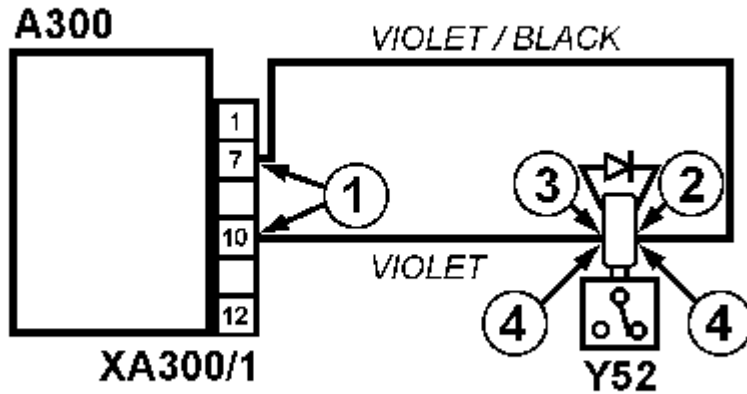
Result must be same as battery voltage.

Result:

YES: END OF TEST

NO: Perform following tests: • [SE26A - Hi-Lo Selection Switches \(EHM\), Diagnostic Schematic and Circuit Test](#) • [SE26A - Reverse Drive Lever \(EHM\), Diagnostic Schematic and Circuit Test](#)

SE26A - Forward Low Clutch (EHM), Diagnostic Schematic and Circuit Test



AT17355

Forward low clutch circuit test

LEGEND:

- 1 - 4 Test points
- A300 EHM control unit
- XA300/1 12-pin connector for EHM control unit
- Y52 Forward low clutch solenoid valve (EHM or EHM II)

Meet following requirements:

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Forward Low Clutch Solenoid Valve Circuit Test

(1) Check resistance between violet/black wire terminal 7 and violet wire terminal 10 of 12-pin connector XA300/1

Action:

Location: [XA300/1 - 12-Pin Connector for EHM Control Unit A300](#)

Item	Measurement	Specification
Proportional valve		
Solenoid valve:	Resistance	approx. 2.2 ohms

Result:

YES: [GO TO 4](#)

NO: [GO TO 2](#)

(2) Check continuity between violet/black wire terminal 7 of 12-pin connector XA300/1 and violet/black wire terminal 2 of 2-pin connector XY52

Action:

Location: [XY52 - 2-Pin Connector for Forward Low Clutch Solenoid Valve Y52 \(EHM or EHM II\)](#)

Continuity must be present.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken violet/black wire between connectors XA300/1 and XY52.

(3) Check continuity between violet wire terminal 10 of 12-pin connector XA300/1 and violet wire terminal 1 of 2-pin connector XY52

Action:

Continuity must be present.

Result:

YES:Check " [Y52 - Forward Low Clutch Solenoid Valve \(EHM or EHM II\)](#) " and replace if necessary. [GO TO 4](#)

NO:Check for corroded connections or broken violet wire between connectors XA300/1 and XY52.

(4) Check continuity between violet wire terminal 1 and violet/black wire terminal 2 of 2-pin connector XY52

Action:

Main switch in IGN position.

Parking brake engaged.

Reverse drive lever in forward position.

Hi-Lo switch in "Lo" position.

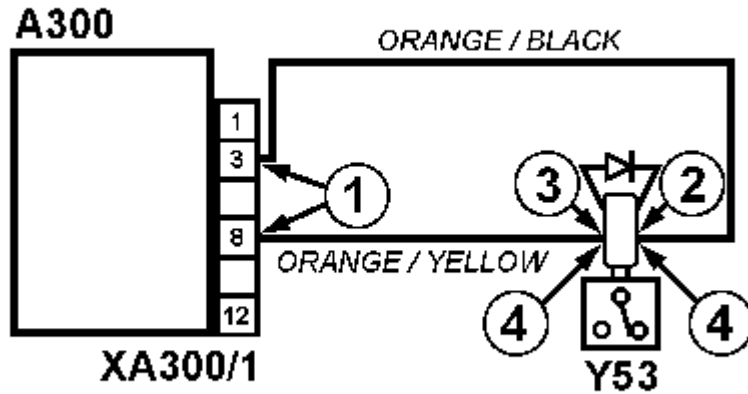
Result must be same as battery voltage.

Result:

YES:END OF TEST

NO:Perform following tests: • [SE26A - Hi-Lo Selection Switches \(EHM\), Diagnostic Schematic and Circuit Test](#) • [SE26A - Reverse Drive Lever \(EHM\), Diagnostic Schematic and Circuit Test](#)

SE26A - Forward High Clutch (EHM), Diagnostic Schematic and Circuit Test



AT17356

Forward high clutch circuit test

LEGEND:

- 1 - 4 Test points
- A300 EHM control unit
- XA300/1 12-pin connector for EHM control unit
- Y53 Forward high clutch solenoid valve (EHM or EHM II)

Meet following requirements:

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Forward High Clutch Solenoid Valve Circuit Test

(1) Check resistance between orange/yellow wire terminal 8 and orange/black wire terminal 3 of 12-pin connector XA300/1

Action:

Location: [XA300/1 - 12-Pin Connector for EHM Control Unit A300](#)

Item	Measurement	Specification
Proportional valve		
Solenoid valve:	Resistance	approx. 2.2 ohms

Result:

YES: [GO TO 4](#)

NO: [GO TO 2](#)

(2) Check continuity between orange/black wire terminal 3 of 12-pin connector XA300/1 and orange/black wire terminal 1 of 2-pin connector XY53

Action:

Location: [XY53 - 2-Pin Connector for Forward High Clutch Solenoid Valve Y53 \(EHM or EHM II\)](#)

Continuity must be present.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken orange/black wire between connectors XA300/1 and XY53.

(3) Check continuity between orange/yellow wire terminal 8 of 12-pin connector XA300/1 and orange/yellow wire terminal 2 of 2-pin connector XY53

Action:

Continuity must be present.

Result:

YES:Check " [Y53 - Forward High Clutch Solenoid Valve \(EHM or EHM II\)](#) " and replace if necessary. [GO TO 4](#)

NO:Check for corroded connections or broken orange/yellow wire between connectors XA300/1 and XY53.

(4) Check continuity between orange/black wire terminal 1 and orange/yellow wire terminal 2 of 2-pin connector XY53

Action:

Main switch in IGN position.

Parking brake engaged.

Reverse drive lever in forward position.

Hi-Lo switch on "Hi" position.

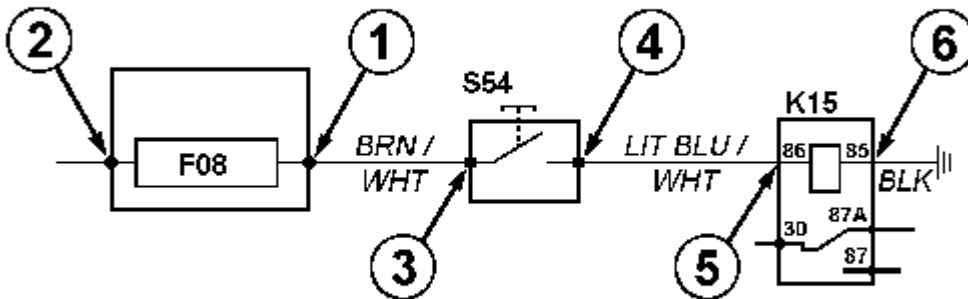
Result must be same as battery voltage.

Result:

YES:END OF TEST

NO:Perform following tests: • [SE26A - Hi-Lo Selection Switches \(EHM\), Diagnostic Schematic and Circuit Test](#) • [SE26A - Reverse Drive Lever \(EHM\), Diagnostic Schematic and Circuit Test](#)

SE26A - Declutch Switch on Range Shift Lever (EHM), Diagnostic Schematic and Circuit Test



AT17354

Declutch switch on range shift lever, circuit test

LEGEND:

- 1 - 6 Test points
- F08 7.5 amp fuse
- K15 Declutch relay (EHM or EHM II)
- S54 Declutch switch on range shift lever (EHM or EHM II)

Meet following requirements:

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Declutch Switch on Range Shift Lever, Circuit Test

(1) Check voltage at fuse F08 output of fuse box

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: [GO TO 2](#)

(2) Check voltage at fuse F08 input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#) Check for failed fuse F08. If fuse is good, check for corroded or loose terminals.

NO:Perform " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) ".

(3) Check voltage at brown/white wire terminal of declutch switch S54 on range shift lever

Action:

Result must be same as battery voltage.

Result:

YES:GO TO 4

NO:Check for corroded connections or broken white/brown wire between declutch switch on range shift lever and fuse box.

(4) Check voltage at output of declutch switch S54 on range shift lever

Action:

Press and hold " [S54 - Declutch Switch on Range Shift Lever \(EHM or EHM II\)](#) ".

Result must be same as battery voltage.

Result:

YES:GO TO 5

NO:Check for failed declutch switch on range shift lever. If switch is good, check for corroded or loose terminals.

(5) Check voltage at white/brown wire terminal 86 of relay K15

Action:

Location: [XK15 - 5-Pin Connector for Declutch Relay K15 \(EHM or EHM II\)](#)

Press and hold " [S54 - Declutch Switch on Range Shift Lever \(EHM or EHM II\)](#) ".

Result must be same as battery voltage.

Result:

YES:GO TO 6

NO:Check for corroded connections or broken white/brown wire between declutch switch on range shift lever and relay K15.

(6) Check ground connection at terminal 85 of relay K15

Action:

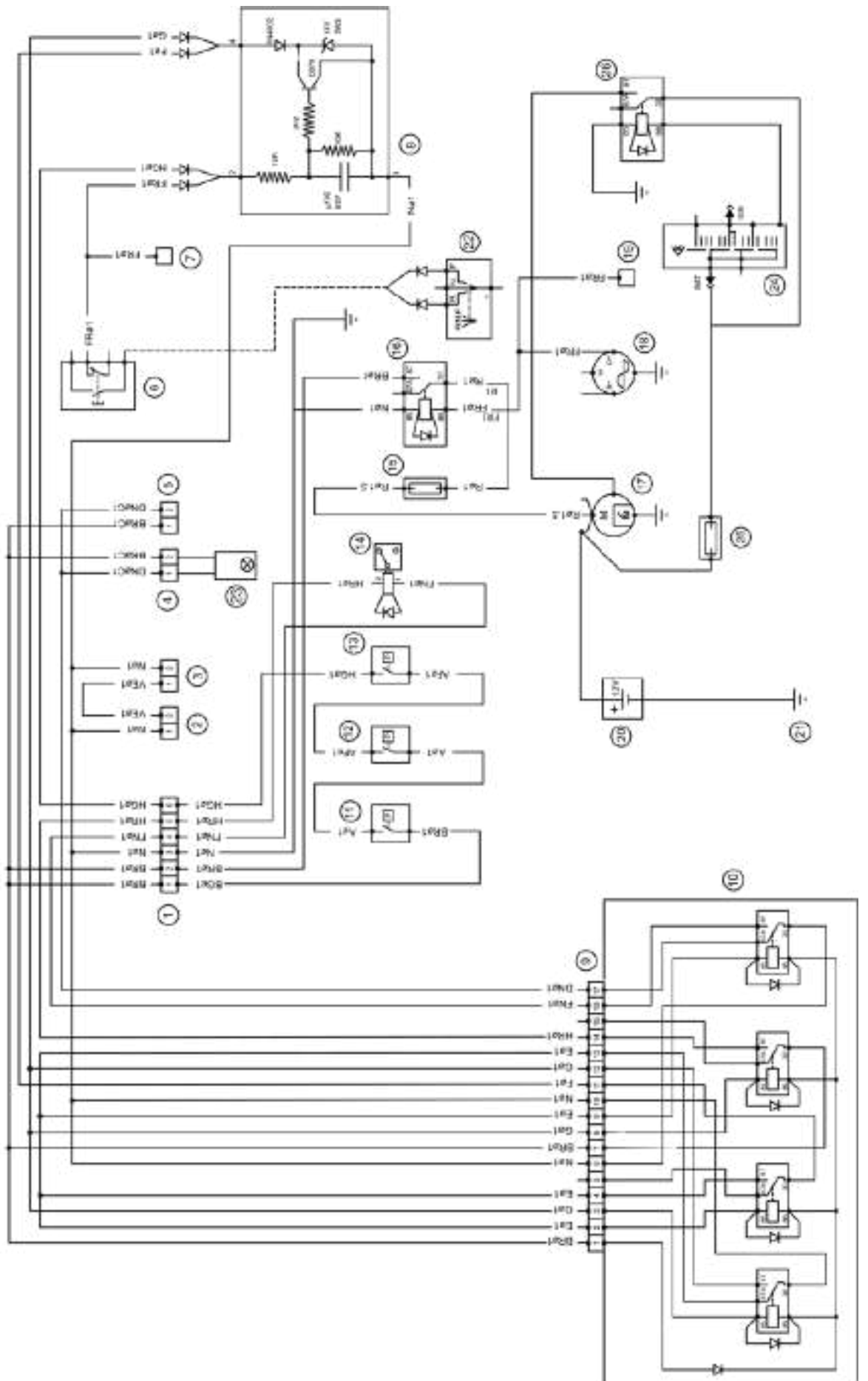
Check ground connection.

Result:

YES:Check [K15 - Declutch Relay \(EHM or EHM II\)](#) and replace if necessary. If relay is good, check for corroded or loose terminals.

NO:Check ground connection on terminal 85 black wire.

SE26A - Shut-Off System (EHM), Functional Schematic and Theory of Operation



AT17184

Shut-off system (EHM)

LEGEND:

- 1 6-pin interconnection X50 between wiring harnesses W12/1 and W12/2
- 2 2-pin interconnection X51/1 to ground between wiring harnesses W03 and W12
- 3 2-pin interconnection X51/2 to ground between wiring harnesses W03 and W12
- 4 2-pin interconnection X52/1 between warning light H50 (EHM or EHM II) and wiring harness W12
- 5 2-pin interconnection X52/2 between warning light H50 (EHM or EHM II) and wiring harness W12
- 6 Clutch pedal switch S72
- 7 1-pin interconnection X53/2 between clutch pedal switch S72 (EHM or EHM II) and wiring harness W12
- 8 Time-delay switch A302
- 9 17-pin connector XA301 for relay box A301
- 10 Relay box A301 of shut-off system
- 11 Transmission oil pressure sensor B300 of forward high clutch (EHM or EHM II)
- 12 Transmission oil pressure sensor B301 of forward low clutch (EHM or EHM II)
- 13 Transmission oil pressure sensor B302 of reverse clutch (EHM or EHM II)
- 14 Shut-off solenoid valve Y300 (EHM or EHM II)
- 15 7.5 amp fuse F23 for shut-off system circuit (EHM)
- 16 Relay K17 of shut-off system (EHM)
- 17 Starter motor M01
- 18 Alternator G02
- 19 1-pin interconnection X54/2 between alternator G02 and wiring harness W12
- 20 Battery G01
- 21 Ground
- 22 Reverse drive lever switch B64
- 23 Warning light H50 (EHM or EHM II)
- 24 Main switch S01
- 25 Main fuse F00, 50 amp
- 26 Starter relay K01

Function

Interrupts the oil supply to the forward high, forward low and reverse clutches if any malfunction was detected.

Major Components

- Relay box A301 of shut-off system
- Time-delay switch A302
- Transmission oil pressure sensors B300 to B302
- Shut-off solenoid valve Y300
- Clutch pedal switch S72

Theory of Operation

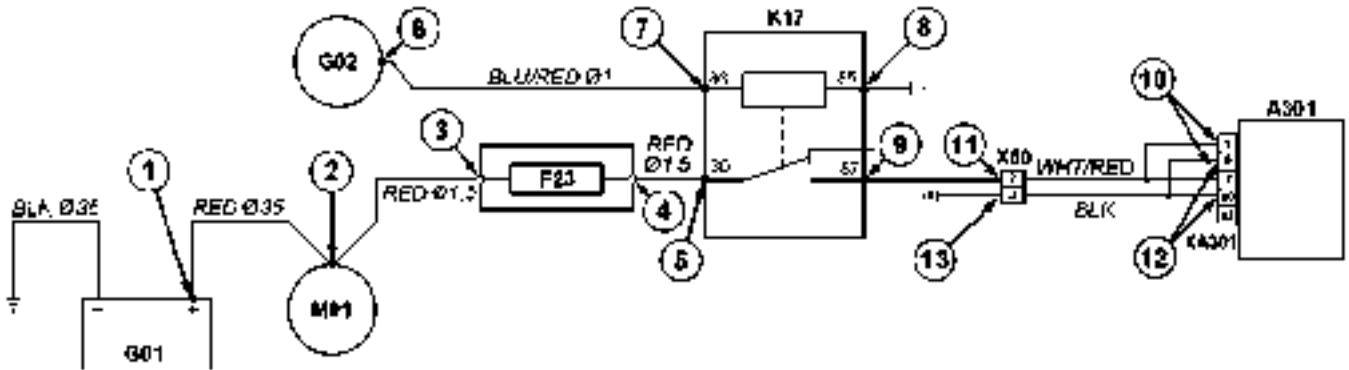
Current flows from battery G01 (20) through starter motor M01 (17) and fuse F23 (15) to relay K17 (16). The alternator G02 (18) activates the relay K17 of shut-off system (16) providing current to the system when engine speed is above 400 rpm.

The current flow to the time-delay switch A302 (8) is supplied in two different ways:

1. From the reverse drive lever switch B64 (22) via the clutch pedal switch S72 (6) when the clutches are requested to be engaged.
 2. From the transmission oil pressure sensors (11), (12) and (13) when the clutches are not requested to be engaged (pressure below 200 kPa (2 bar; 29 psi).
- In normal operation conditions, when the main switch S01 (24) is switched on, the relay box A301 (10) supplies current to the shut-off solenoid valve Y300 (14) and the wet clutches are provided with oil.
 - When one or more clutches are pressurized even if no electric command is present, the shut-off system is activated and the current flow is interrupted by the clutch pedal switch S72 (6) and pressure sensors (11), (12) and (13). Power supply to the relay box (10) is then cut off and shut-off solenoid valve (14) deactivated, deviating the oil flow to the sump and activating the warning light (23).

Even after the problem has been solved, the relay box (10) and the shut-off solenoid valve (14) remain deactivated until the main switch (24) is switched OFF and ON again.

SE26A - Power Supply to Shut-Off System (EHM), Diagnostic Schematic and Circuit Test



AT17334

Test points

LEGEND:

- 1 - 13 Test points
- A301 Relay box (EHM)
- F23 7.5 amp fuse for shut-off system circuit (EHM)
- G01 Battery
- G02 Alternator
- K17 Relay of shut-off system (EHM)
- M01 Starter motor
- X50 6-pin interconnection between wiring harnesses W12/1 and W12/2
- XA301 17-pin connector for relay box A301 (EHM)

Meet following requirements:

- Main switch in RUN (1) position.
- Gear shift lever in neutral position.
- PTO disengaged.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Power Supply Voltage Shut-Off System Test

(1) Check voltage at battery posts

Action:

Result must be minimum 11.8 volt direct-current.

Result:

YES: [GO TO 2](#)

NO: Test and charge battery G01 (replace if necessary).

(2) Check voltage at starter terminals M01

Action:

Location: [XM01 - Connector for Starter Motor M01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken wires between battery and starter motor.

(3) Check voltage at F23 fuse input

Action:

Location: [XF23 - 2-Pin Connector for Fuse F23 of Shut-Off System Circuit \(EHM\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for corroded connections or broken red wire between starter motor and fuse F23.

(4) Check voltage at F23 fuse output

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check fuse F23 and replace if necessary. If fuse is good, check for corroded or loose terminals.

(5) Check voltage at red wire terminal 30 of relay K17 (EHM)

Action:

Location: [XK17 - 4-Pin Connector for Relay K17 \(EHM\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded connections or broken red wire between fuse F23 and relay K17 (EHM).

(6) Check voltage at blue/red wire terminal of alternator G02

Action:

Location: [XG02 - 3/1-Pin Connectors for Alternator G02](#)

Start the engine.

Result must be minimum 11.8 volt direct-current.

Result:

YES: [GO TO 7](#)

NO: Perform [SE01D - Charging System, Diagnostic Schematic and Circuit Test](#) .

(7) Check voltage at blue/red wire terminal 86 of relay K17 (EHM)

Action:

Engine running.

Result must be minimum 11.8 volt direct-current.

Result:

YES: [GO TO 8](#)

NO: Check for corroded connections or broken blue/red wire between relay K17 (EHM) and alternator G02.

(8) Check ground connection at terminal 85 of relay K17 (EHM)

Action:

Check ground connection.

Result:

YES: [GO TO 9](#)

NO: Check continuity to ground of black wire.

(9) Check voltage at white/red wire terminal 87 of relay K17 (EHM)

Action:

Engine running.

Result must be minimum 11.8 volt direct-current.

Result:

YES: [GO TO 10](#)

NO: Check " [K17 - Relay of Shut-Off System \(EHM\)](#) " and replace if necessary.

(10) Check voltage at white/red wire terminals 1 and 7 of 17-pin connector XA301

Action:

Location: [XA301 - 17-Pin Connector for Relay Box A301 \(EHM\)](#)

Engine running.

Result must be minimum 11.8 volt direct-current.

Result:

YES: [GO TO 12](#)

NO: [GO TO 11](#)

(11) Check voltage at white/red wire terminal 2 of 6-pin connector X50

Action:

Location: [X50 - 6-Pin Interconnection between Wiring Harnesses W12/1 and W12/2](#)

Engine running.

Result must be minimum 11.8 volt direct-current.

Result:

YES: Check for corroded connections or broken white/red wire between 17-pin connector XA301 and 6-pin connector X50.

NO: Check for corroded connections or broken white/red wire between relay K17 (EHM) and 6-pin connector X50.

(12) Check ground connection at terminals 6 and 10 of 17-pin connector XA301

Action:

Check ground connection.

Result:

YES: END OF TEST

NO: [GO TO 13](#)

(13) Check ground connection at terminal 3 of 6-pin connector X50

Action:

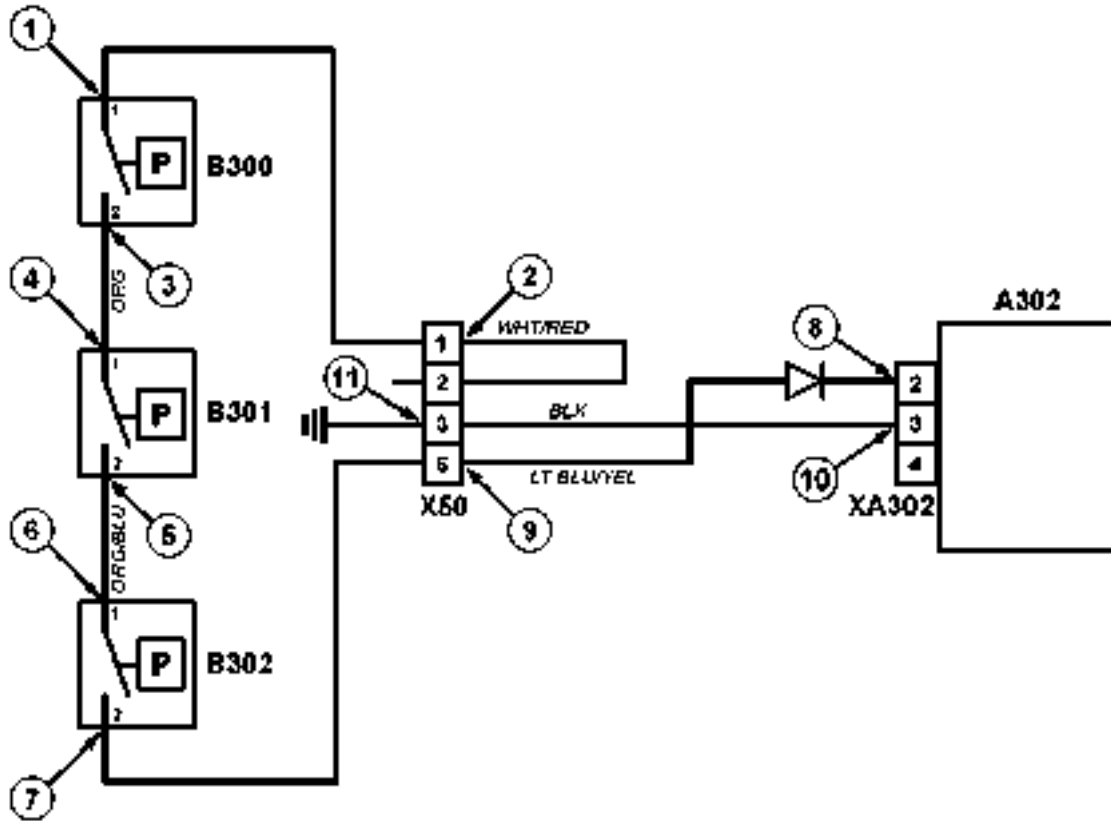
Check ground connection.

Result:

YES:Check for corroded connections or broken black wire between 17-pin connector XA301 and 6-pin connector X50.END OF TEST

NO:Check continuity to ground of black wire.

SE26A - Transmission Oil Pressure Sensors of Shut-Off System (EHM), Diagnostic Schematic and Circuit Test



AT17363

Transmission oil pressure sensor circuit test

LEGEND:

- 1 - 11 Test points
- A302 Time-delay switch (EHM)
- B300 Transmission oil pressure sensor of forward high clutch (EHM or EHM II)
- B301 Transmission oil pressure sensor of forward low clutch (EHM or EHM II)
- B302 Transmission oil pressure sensor of reverse clutch (EHM or EHM II)
- X50 6-pin interconnection between wiring harnesses W12/1 and W12/2
- XA302 5-pin connector for time-delay switch A302 (EHM)

Meet following requirements:

- Main switch in IGN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Transmission Oil Pressure Sensors, Circuit Test

(1) Check voltage at white/red wire terminal 1 of 2-pin connector XB300

Action:

Location: [XB300 - 2-Pin Connector for Transmission Oil Pressure Sensor B300 of Forward High Clutch \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: [GO TO 2](#)

(2) Check voltage at white/red wire terminal 1 of 6-pin connector X50

Action:

Location: [X50 - 6-Pin Interconnection between Wiring Harnesses W12/1 and W12/2](#)

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or broken white/red wire between connectors XB300 and X50. [GO TO 3](#)

NO: Perform " [SE26A - Power Supply to Shut-Off System \(EHM\), Diagnostic Schematic and Circuit Test](#) "

(3) Check voltage at orange wire terminal 2 of 2-pin connector XB300

Action:

Location: [XB300 - 2-Pin Connector for Transmission Oil Pressure Sensor B300 of Forward High Clutch \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check " [B300 - Transmission Oil Pressure Sensor of Forward High Clutch \(EHM or EHM II\)](#) " and replace if necessary.

(4) Check voltage at orange wire terminal 1 of 2-pin connector XB301

Action:

Location: [XB301 - 2-Pin Connector for Transmission Oil Pressure Sensor B301 of Forward Low Clutch \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check for corroded connections or broken orange wire between connectors XB301 and XB300.

(5) Check voltage at orange/blue wire terminal 2 of 2-pin connector XB301

Action:

Location: [XB301 - 2-Pin Connector for Transmission Oil Pressure Sensor B301 of Forward Low Clutch \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check " [B301 - Transmission Oil Pressure Sensor of Forward Low Clutch \(EHM or EHM II\)](#) " and replace if necessary.

(6) Check voltage at orange/blue wire terminal 1 of 2-pin connector XB302

Action:

Location: [XB302 - 2-Pin Connector for Transmission Oil Pressure Sensor B302 of Reverse Clutch \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: Check for corroded connections or broken orange/blue wire between connectors XB301 and XB302.

(7) Check voltage at light blue/yellow wire terminal 2 of 2-pin connector XB302

Action:

Location: [XB302 - 2-Pin Connector for Transmission Oil Pressure Sensor B302 of Reverse Clutch \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO: Check " [B302 - Transmission Oil Pressure Sensor of Reverse Clutch \(EHM or EHM II\)](#) " and replace if necessary.

(8) Check voltage at light blue/yellow wire terminal 2 of 5-pin connector XA302

Action:

Location: [XA302 - 5-Pin Connector for Time-Delay Switch A302 \(EHM\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 10](#)

NO: [GO TO 9](#)

(9) Check voltage at light blue/yellow wire terminal 6 of 6-pin connector X50

Action:

Location: [X50 - 6-Pin Interconnection between Wiring Harnesses W12/1 and W12/2](#)

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or broken light blue/yellow wire between connectors X50 and XA302. [GO TO 10](#)

NO: Check for corroded connections or broken light blue/yellow wire between connectors X50 and XB302. [GO TO 10](#)

(10) Check ground connection at black wire terminal 3 of 5-pin connector XA302

Action:

Location: [XA302 - 5-Pin Connector for Time-Delay Switch A302 \(EHM\)](#)

Check ground connection.

Result:

YES:END OF TEST

NO: [GO TO 11](#)

(11) Check ground connection at black wire terminal 3 of 6-pin connector X50

Action:

Location: [X50 - 6-Pin Interconnection between Wiring Harnesses W12/1 and W12/2](#)

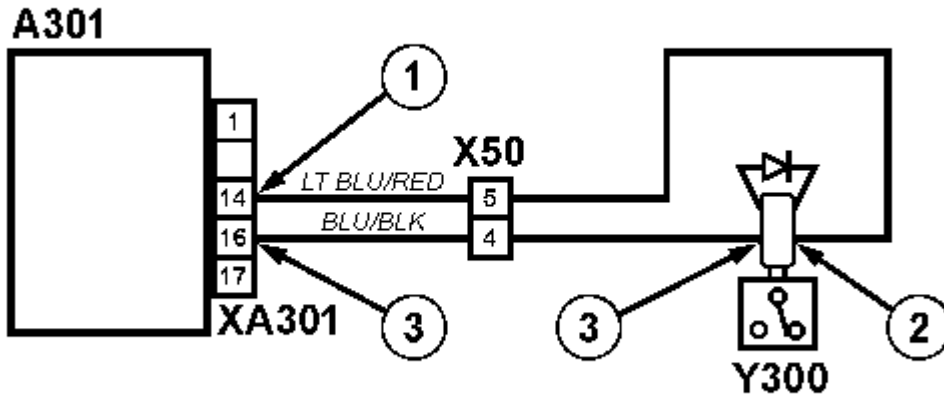
Check ground connection.

Result:

YES:Check for corroded connections or broken black wire between connectors X50 and XA302.END OF TEST

NO:Check continuity to ground of black wire.

SE26A - Shut-Off Solenoid Valve of Shut-Off System (EHM), Diagnostic Schematic and Circuit Test



AT17362

Shut-off solenoid valve circuit test

LEGEND:

- 1 - 3 Test points
- A301 Relay box (EHM)
- X50 6-pin interconnection between wiring harnesses W12/1 and W12/2
- XA301 17-pin connector for relay box A301 (EHM)
- Y300 Shut-off solenoid valve (EHM or EHM II)

Meet following requirements:

- Main switch in RUN (1) position.
- Gear shift lever in neutral position.
- PTO disengaged.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Shut-Off Solenoid Valve Circuit Test

(1) Check voltage at light blue/red wire terminal 14 of 17-pin connector XA301

Action:

Location: [XA301 - 17-Pin Connector for Relay Box A301 \(EHM\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: Perform " [SE26A - Power Supply to Shut-Off System \(EHM\), Diagnostic Schematic and Circuit Test](#) "

(2) Check voltage at light blue/red wire terminal 2 of 2-pin connector XY300

Action:

Location: [XY300 - 2-Pin Connector for Shut-Off Solenoid Valve Y300 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken light blue/red wire between connectors XA301 and XY300.

(3) Check continuity between blue/black wire terminal 16 of 17-pin connector XA301 and terminal 1 of 2-pin connector XY300

Action:

Main switch in OFF position.

Continuity must be present.

Result:

YES:Check " [Y300 - Shut-Off Solenoid Valve \(EHM or EHM II\)](#) " and replace if necessary.Perform " [SE26A - Power Supply to Shut-Off System \(EHM\), Diagnostic Schematic and Circuit Test](#) "END OF TEST

NO:Check for corroded connections or broken blue/black wire between connectors XA301 and XY300.

Group S26B - SE26B - Electro-Hydraulic Management (EHM II)

SE26B - Electro-Hydraulic Management (EHM II) (Summary of References)

[SE26B - Electro-Hydraulic Management \(EHM II\), Functional Schematic](#)

[SE26B - System Supply Voltage \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - Warning Light \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - Oil Filter Restriction Sensor \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - Ambient Temperature Sensor \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - High Range/Low Range Switch on Transmission \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - Transmission Oil Temperature Sensor \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - Calibration Switch \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - Front-Wheel Drive \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - Differential Lock \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - Clutch Pedal Switch \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - Clutch Pedal Potentiometer \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - Reverse Drive Lever \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - Hi-Lo Selection Switches \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - Reverse Clutch \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - Forward Low Clutch \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - Forward High Clutch \(EHM II\), Diagnostic Schematic and Circuit Test](#)

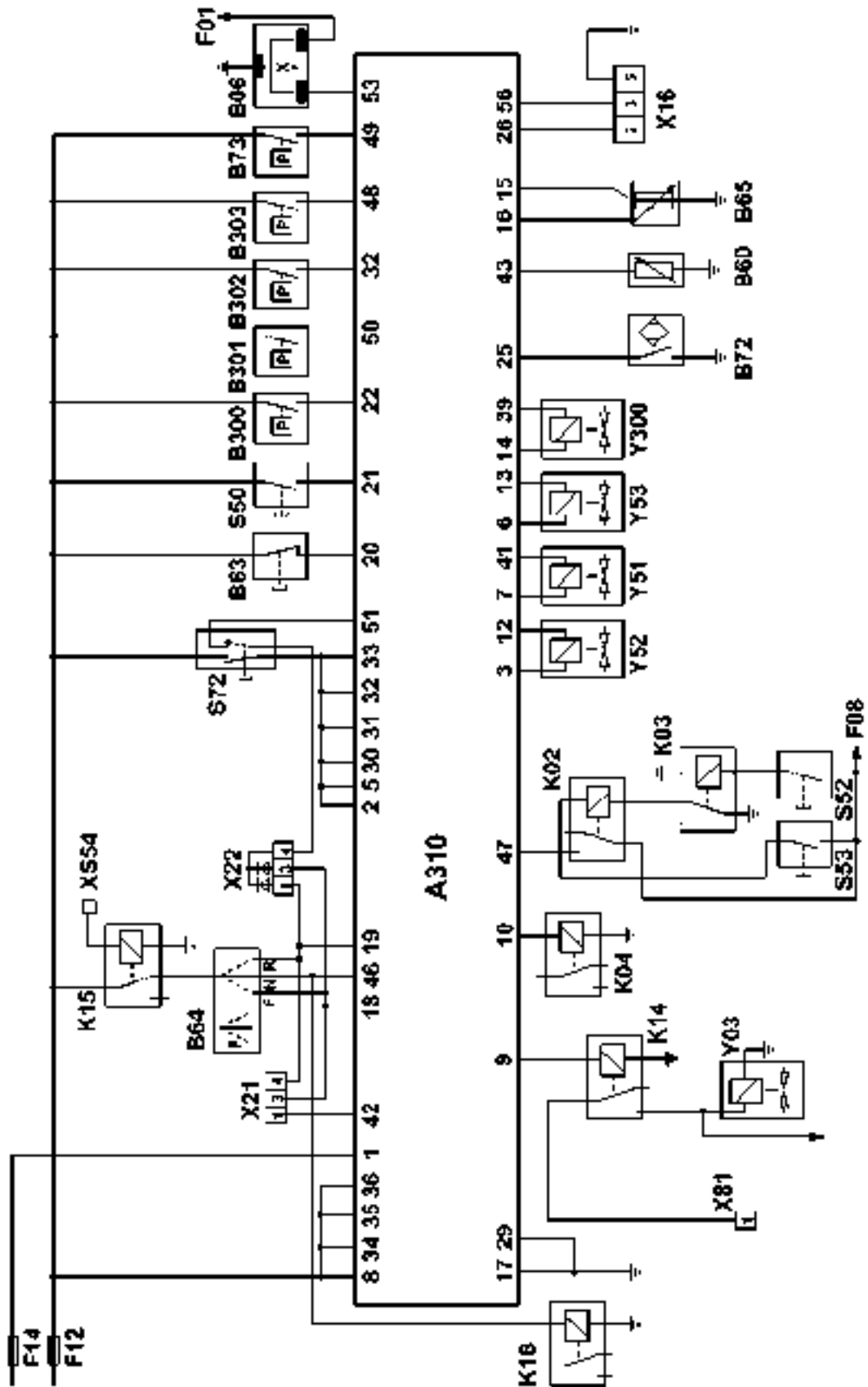
[SE26B - Declutch Switch on Range Shift Lever \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - Transmission Oil Pressure Sensors \(EHM II\), Diagnostic Schematic and Circuit Test](#)

[SE26B - EHM II System Pressure Sensor, Diagnostic Schematic and Circuit Test](#)

[SE26B - Shut-Off Solenoid Valve \(EHM II\), Diagnostic Schematic and Circuit Test](#)

SE26B - Electro-Hydraulic Management (EHM II), Functional Schematic



AT17374

EHM II control unit

LEGEND:

1 - 56	Pins of 56-pin connector XA310 of EHM II control unit
A310	EHM II control unit
B06	Transmission speed sensor
B60	Transmission oil temperature sensor (EHM or EHM II)
B63	High range / low range switch on transmission (EHM or EHM II)
B64	Reverse drive lever switch (EHM or EHM II)
B65	Clutch pedal potentiometer (EHM or EHM II)
B72	Engine Speed Sensor
B73	Oil filter restriction sensor (EHM or EHM II)
B300	Transmission oil pressure sensor of forward high clutch (EHM or EHM II)
B301	Transmission oil pressure sensor of forward low clutch (EHM or EHM II)
B302	Transmission oil pressure sensor of reverse clutch (EHM or EHM II)
B303	EHM II system pressure sensor
F01	10 amp fuse
F08	7.5 amp fuse
F12	15 amp fuse
F14	10 amp fuse
K02	Hi-Lo relay (ON)
K03	Hi-Lo relay (OFF)
K04	Differential lock relay (ON)
K14	Front-wheel drive relay (EHM or EHM II)
K15	Declutch relay (EHM or EHM II)
K16	Neutral start relay (EHM or EHM II)
S50	Calibration switch (EHM or EHM II)
S52	Hi-Lo switch (low)
S53	Hi-Lo switch (high)
S72	Clutch pedal switch (EHM or EHM II)
X16	9-pin com-port for diagnostic connector (EHM or EHM II) to PC
X21	5-pin connector for instrument panel
X22	3-pin connector for diodes
X81	1-pin interconnection between wiring harnesses W02 and W03 II
XS54	1-pin connector for declutch switch S54 (EHM or EHM II)
Y03	Front-wheel drive solenoid valve
Y51	Reverse clutch solenoid valve (EHM or EHM II)
Y52	Forward low clutch solenoid valve (EHM or EHM II)
Y53	Forward high clutch solenoid valve (EHM or EHM II)
Y300	Shut-off solenoid valve (EHM or EHM II)

- [A310 - EHM II Control Unit](#)
- [B06 - Transmission Speed Sensor](#)
- [B60 - Transmission Oil Temperature Sensor \(EHM or EHM II\)](#)
- [B63 - High Range/Low Range Switch on Transmission \(EHM or EHM II\)](#)
- [B64 - Reverse Drive Lever Switch \(EHM or EHM II\)](#)
- [B65 - Clutch Pedal Potentiometer \(EHM or EHM II\)](#)
- [B300 - Transmission Oil Pressure Sensor of Forward High Clutch \(EHM or EHM II\)](#)
- [B301 - Transmission Oil Pressure Sensor of Forward Low Clutch \(EHM or EHM II\)](#)
- [B302 - Transmission Oil Pressure Sensor of Reverse Clutch \(EHM or EHM II\)](#)
- [B303 - EHM II System Pressure Sensor](#)

- [F01 to F15 - Fuse Box](#)
- [K02 - Hi-Lo Relay \(ON\)](#)
- [K03 - Hi-Lo Relay \(OFF\)](#)
- [K04 - Differential Lock Relay \(ON\)](#)
- [K14 - Front-Wheel Drive Relay \(EHM or EHM II\)](#)
- [K15 - Declutch Relay \(EHM or EHM II\)](#)
- [K16 - Neutral Start Relay \(EHM or EHM II\)](#)

- [S50 - Calibration Switch \(EHM or EHM II\)](#)
- [S52 - Hi-Lo Switch \(low\)](#)
- [S53 - Hi-Lo Switch \(high\)](#)
- [S72 - Clutch Pedal Switch \(EHM or EHM II\)](#)

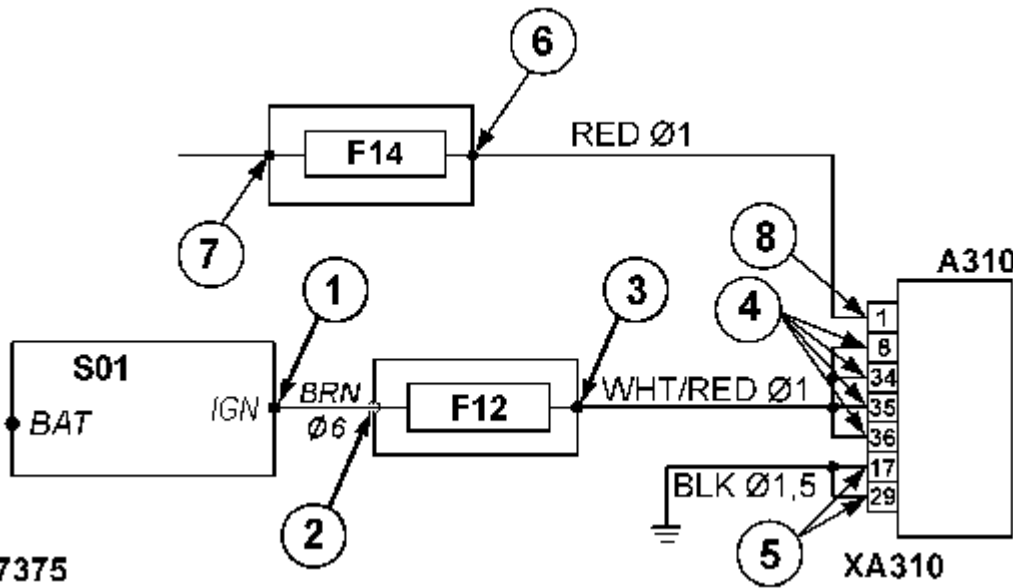
- [X16 - 9-Pin Com-Port for Diagnostic Connector \(EHM or EHM II\) to PC](#)
- [X21 - 5-Pin Connector for Instrument Panel](#)
- [X22 - 3-Pin Connector for Diodes](#)
- [X81 - 1-Pin Interconnection between Wiring Harnesses W02 and W03 II](#)

- [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

- [XS54 - 1-Pin Connector for Declutch Switch S54 \(EHM or EHM II\)](#)

- [Y03 - Front-Wheel Drive Solenoid Valve](#)
- [Y51 - Reverse Clutch Solenoid Valve \(EHM or EHM II\)](#)
- [Y52 - Forward Low Clutch Solenoid Valve \(EHM or EHM II\)](#)
- [Y53 - Forward High Clutch Solenoid Valve \(EHM or EHM II\)](#)
- [Y300 - Shut-Off Solenoid Valve \(EHM or EHM II\)](#)

SE26B - System Supply Voltage (EHM II), Diagnostic Schematic and Circuit Test



AT17375

EHM II supply voltage test points

LEGEND:

- 1 - 8 Test points
- A310 EHM II control unit
- F12 15 amp fuse
- F14 15 amp fuse
- S01 Main switch
- XA310 56-pin connector for EHM II control unit A310

Meet following requirements:

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Supply Voltage Test

(1) Check voltage at IGN terminal of main switch S01

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at fuse F12 input of fuse box

Action:

Location: XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken brown wire between main switch and fuse box.

(3) Check voltage at fuse F12 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for failed fuse F12. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at the 56-pin connector XA310 of the EHM II control unit A310

Action:

4.1

Check voltage at white/red wire terminal 8 of 56-pin connector XA310 of the EHM II control

unit A310

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Result must be same as battery voltage.

Result:

YES:GO TO 4.2

NO:Check for corroded connections or broken white/red wire between fuse box and the EHM II control unit A310.

Action:

4.2

Check voltage at white/red wire terminal 34 of 56-pin connector XA310 of the EHM II control unit A310

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Result must be same as battery voltage.

Result:

YES:GO TO 4.3

NO:Check for corroded connections or broken white/red wire between fuse box and the EHM II control unit A310.

Action:

4.3

Check voltage at white/red wire terminal 35 of 56-pin connector XA310 of the EHM II control unit A310

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Result must be same as battery voltage.

Result:

YES:GO TO 4.4

NO:Check for corroded connections or broken white/red wire between fuse box and the EHM II control unit A310.

Action:

4.4

Check voltage at white/red wire terminal 36 of 56-pin connector XA310 of the EHM II control unit A310

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO:Check for corroded connections or broken white/red wire between fuse box and the EHM II control unit A310.

(5) Check ground connection at black wire terminal 17 and 25 of 56-pin connector XA310 of the EHM II control unit A310

Action:

Check ground connection.

Result:

YES: [GO TO 6](#)

NO:Check continuity to ground of black wire.

(6) Check voltage at fuse F14 output of fuse box

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO: [GO TO 7](#)

(7) Check voltage at fuse F14 input of fuse box

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES:Check fuse F14 and replace if necessary.

NO: [GO TO 8](#)

(8) Check voltage red wire terminal 1 of 56-pin connector XA310 of the EHM II control unit A310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

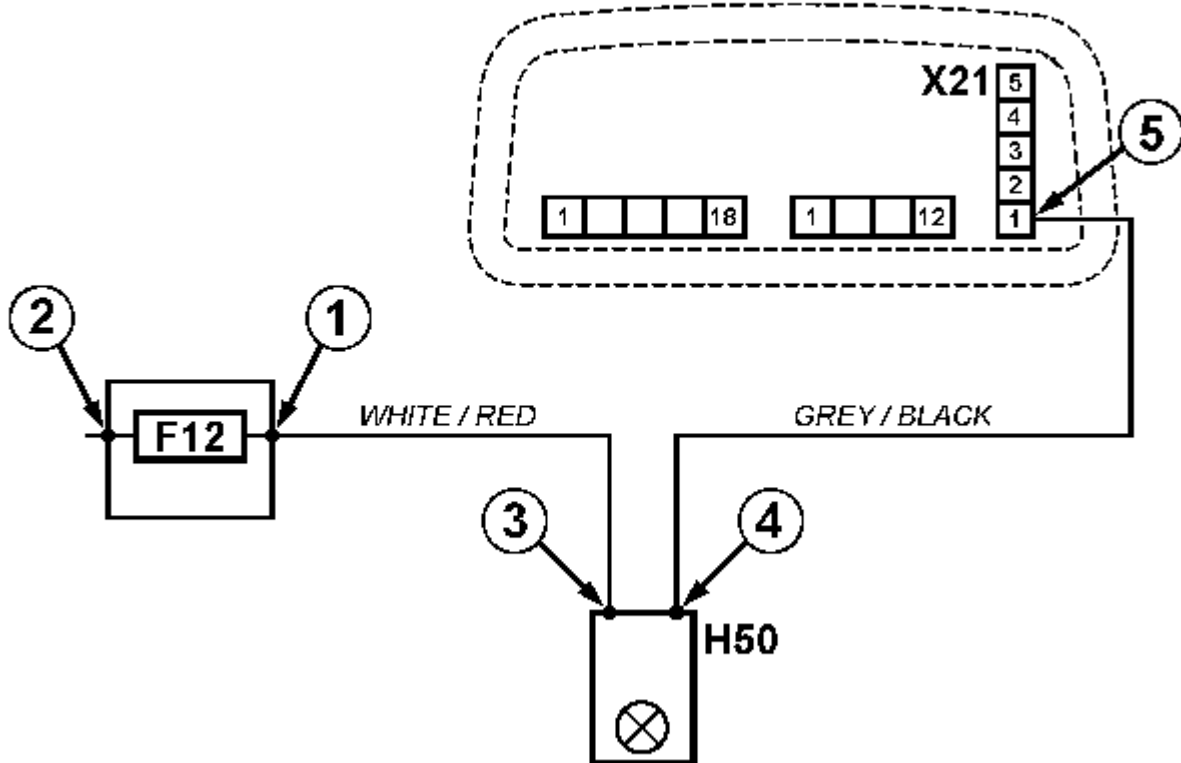
Result must be same as battery voltage.

Result:

YES:Check " [A310 - EHM II Control Unit](#) " and replace if necessary.END OF TEST

NO:Check for corroded connections or broken white/red wire between fuses F14 and EHM II control unit A310.

SE26B - Warning Light (EHM II), Diagnostic Schematic and Circuit Test



AT17376

Warning light circuit test

LEGEND:

- 1 - 6 Test points
- A310 EHM II control unit
- F12 15 amp fuse
- H50 Warning light (EHM or EHM II)
- X21 5-pin connector for instrument panel
- XA310 12-pin connector (EHM II)

Meet following requirements:

- Main switch in IGN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Warning Light (EHM II), Circuit Test

(1) Check voltage at F12 fuse output

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: [GO TO 2](#)

(2) Check voltage at F12 fuse input

Action:

Result must be same as battery voltage.

Result:

YES:Check fuse F12 and replace if necessary. If fuse is good, check for corroded or loose terminals. [GO TO 3](#)

NO:Perform " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) ".

(3) Check voltage at white/red wire terminal 2 of 2-pin connector XH50

Action:

Location: [XH50 - 2-Pin Connector for Warning Light H50 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO:Check for corroded connections or broken white/red wire between fuse F12 and 2-pin connector XH50.

(4) Check voltage at grey/black wire terminal 1 of 2-pin connector XH50

Action:

Disconnect " [X21 - 5-Pin Connector for Instrument Panel](#) " and " [XB73 - 2-Pin Connector for Oil Filter Restriction Sensor B73 \(EHM or EHM II\)](#) ".

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO:Check " [H50 - Warning Light \(EHM or EHM II\)](#) " and replace if necessary. If bulb is good, check for corroded or loose terminals.

(5) Check voltage at grey/black wire terminal 1 of 5-pin connector X21 for instrument panel

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO:Check for corroded connections or broken light blue/black wire between 2-pin connector XH50 and 5-pin connector X21.

(6) Check continuity between brown/pink wire terminal 5 of 5-pin connector X21 and terminal 42 of 56-pin connector XA310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

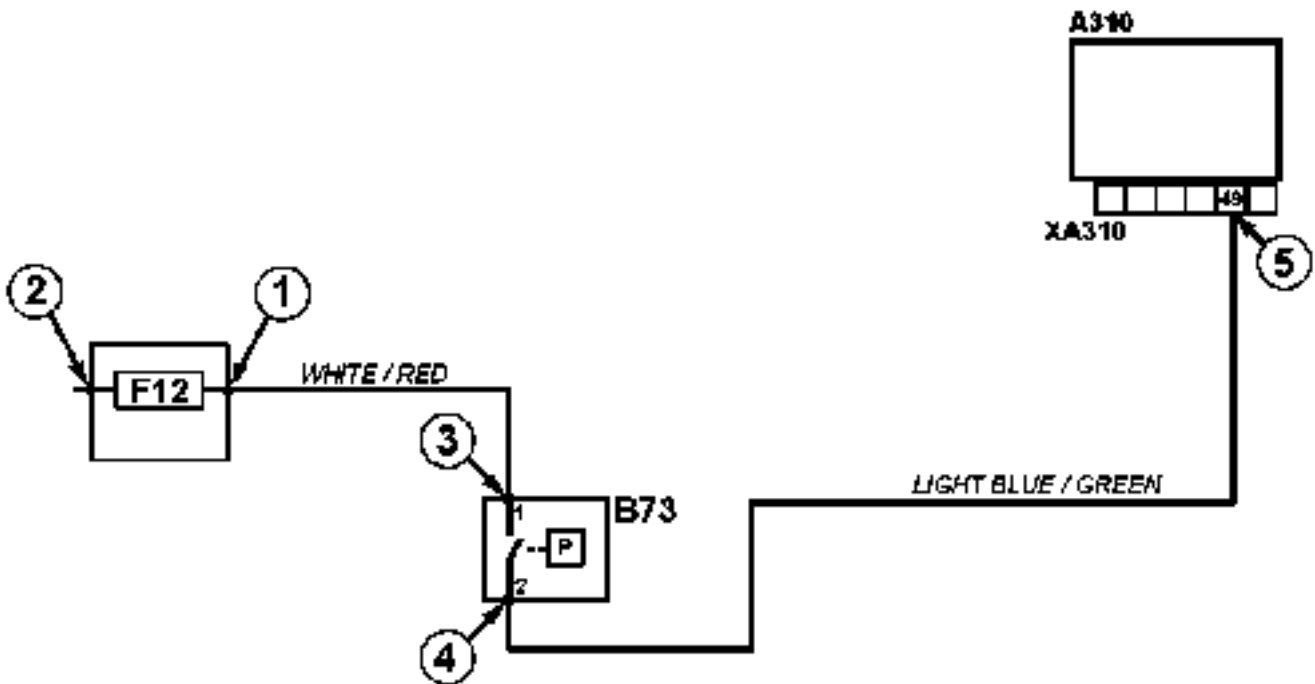
Continuity must be present.

Result:

YES:END OF TEST

NO:Check for corroded connections or broken brown/pink wire between connector X21 and 56-pin connector XA310.

SE26B - Oil Filter Restriction Sensor (EHM II), Diagnostic Schematic and Circuit Test



AT17392

Oil filter restriction sensor circuit test

LEGEND:

- 1 - 5 Test points
- A310 EHM II control unit
- B73 Oil filter restriction sensor (EHM or EHM II)
- F12 15 amp fuse
- X21 5-pin connector for instrument panel
- XA310 56-pin connector (EHM II)

Meet following requirements:

- Main switch in IGN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Oil Filter Restriction Sensor (EHM II), Circuit Test

(1) Check voltage at F12 fuse output

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: [GO TO 2](#)

(2) Check voltage at F12 fuse input

Action:

Result must be same as battery voltage.

Result:

YES:Check fuse F12 and replace if necessary. If fuse is good, check for corroded or loose terminals. [GO TO 3](#)

NO:Perform " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) ".

(3) Check voltage at white/red wire terminal 1 of 2-pin connector XB73

Action:

Location: [XB73 - 2-Pin Connector for Oil Filter Restriction Sensor B73 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO:Check for corroded connections or broken white/red wire between fuse F12 and 2-pin connector XB73.

(4) Check continuity between light blue/green wire terminal 2 of 2-pin connector XB73 and terminal 49 of 56-pin connector XA310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

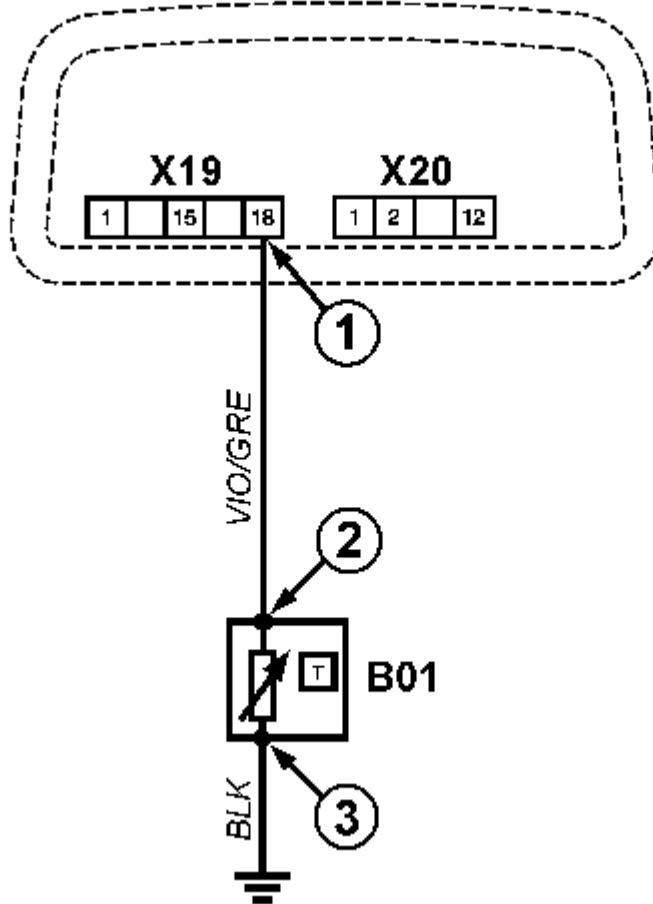
Continuity must be present.

Result:

YES: Check [B73 - Oil Filter Restriction Sensor \(EHM or EHM II\)](#) and replace if necessary. END OF TEST

NO: Check for corroded connections or broken light blue/green wire between connector XB73 and 56-pin connector XA310.

SE26B - Ambient Temperature Sensor (EHM II), Diagnostic Schematic and Circuit Test



AT17352

Ambient temperature sensor circuit test

LEGEND:

- 1 - 3 Test points
- B01 Ambient temperature sensor (EHM or EHM II)
- X19 18-pin connector for instrument panel
- X20 12-pin connector for instrument panel

Meet following requirements:

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Ambient Temperature Sensor

(1) Check voltage at violet/green wire terminal 18 of 18-pin connector X19

Action:

Location: [X19 - 18-Pin Connector for Instrument Panel](#)

Disconnect " [B01 - Ambient Temperature Sensor \(EHM or EHM II\)](#) " .

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO:Check [SE02 - Power Supply to Instrument Panel, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at violet/green wire terminal 2 of 2-pin connector XB01

Action:

Location: [XB01 - 2-Pin Connector for Ambient Temperature Sensor B01 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO:Check for corroded connections or broken violet/green wire between 2-pin connector XB01 and 18-pin connector X19.

(3) Check ground connection at black wire terminal 1 of 2-pin connector XB01

Action:

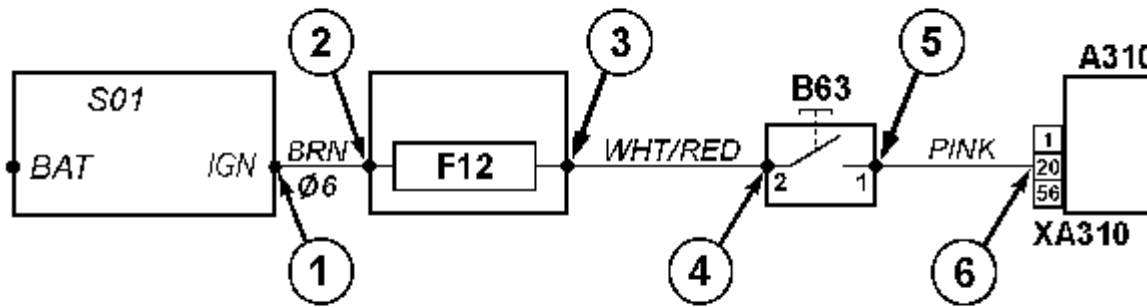
Check ground connection.

Result:

YES:Check " [B01 - Ambient Temperature Sensor \(EHM or EHM II\)](#) " and replace if necessary.
END OF TEST.

NO:Check continuity to ground of black wire.

SE26B - High Range/Low Range Switch on Transmission (EHM II), Diagnostic Schematic and Circuit Test



AT17377

High range/low range switch on transmission, test points

LEGEND:

- 1 - 6 Test points
- A310 EHM II control unit
- B63 High range/low range switch on transmission (EHM or EHM II)
- F12 15 amp fuse
- S01 Main switch
- XA310 56-pin connector

Meet following requirements:

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

High Range Input Test

(1) Check voltage at IGN terminal of main switch S01

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: Perform [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#).

(2) Check voltage at fuse F12 input of fuse box

Action:

Location: [F01 to F15 - Fuse Box](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or break in brown wire between main switch and fuse box.

(3) Check voltage at fuse F12 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for failed fuse F12. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at white/red wire terminal 2 input of high range/low range switch B63 on transmission

Action:

Location: [XB63 - 2-Pin Connector for High Range/Low Range Switch B63 on Transmission \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

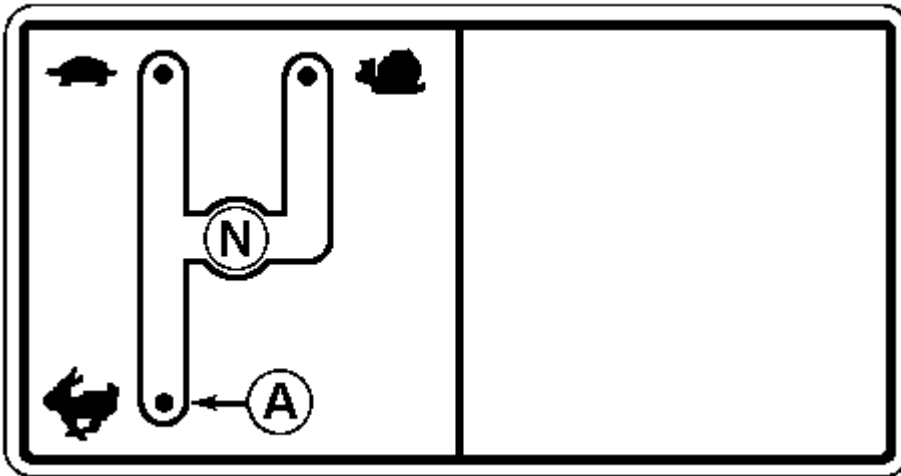
YES: [GO TO 5](#)

NO: Check for corroded connections or break in white/red wire between high range/low range switch B63 on transmission and fuse box.

(5) Check voltage at pink wire terminal 1 output of high range/low range switch B63 on transmission

Action:

Range shift lever in position (A).



AT17393

Decal

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check [B63 - High Range/Low Range Switch on Transmission \(EHM or EHM II\)](#) and replace if necessary. If switch is good, check for corroded or loose terminals.

(6) Check voltage at pink wire terminal 20 at the 56-pin connector XA310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

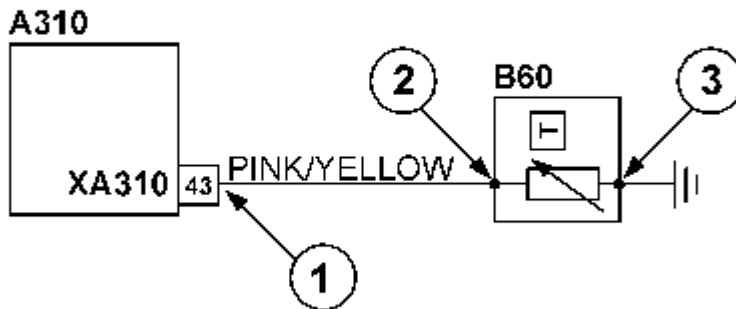
Result must be same as battery voltage.

Result:

YES: END OF TEST

NO: Check for corroded connections or break in pink wire between high range/low range switch on transmission and EHM.

SE26B - Transmission Oil Temperature Sensor (EHM II), Diagnostic Schematic and Circuit Test



AT17394

Transmission oil temperature and calibration switch test points

LEGEND:

- 1 - 3 Test points
- A310 EHM II control unit
- B60 Transmission oil temperature sensor (EHM or EHM II)
- XA310 56-pin connector for EHM II control unit A310

Meet following requirements:

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Transmission Oil Temperature Sensor Test

(1) Check resistance at pink/yellow wire terminal 43 of 56-pin connector XA310 of EHM II control unit A310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Disconnect 56-pin connector XA310.

Check resistance between terminal 43 and ground connection.

Item	Measurement	Specification
B60 - Transmission Oil Temperature Sensor (EHM or EHM II)		
Resistance value:	at 20°C (68°F)	approx. 2500 ohms
	at 80°C (194°F)	approx. 330 ohms

Result:

YES:END OF TEST

NO: [GO TO 2](#)

(2) Check resistance at pink/yellow wire terminal 1 of 2-pin connector XB60

Action:

Location: [XB60 - 2-Pin Connector for Transmission Oil Temperature Sensor B60 \(EHM or EHM II\)](#)

Check resistance between transmission oil temperature sensor B60 and ground connection.

Item	Measurement	Specification
B60 - Transmission Oil Temperature Sensor		
Resistance value:	at 20°C (68°F)	approx. 2500 ohms
	at 80°C (194°F)	approx. 330 ohms

Result:

YES:Check for corroded connections or broken pink/yellow wire between 2-pin connector XB60 and 56-pin connector XA310 of EHM II control unit A310.

NO: [GO TO 3](#)

(3) Check ground connection at black wire terminal 2 of 2-pin connector XB60

Action:

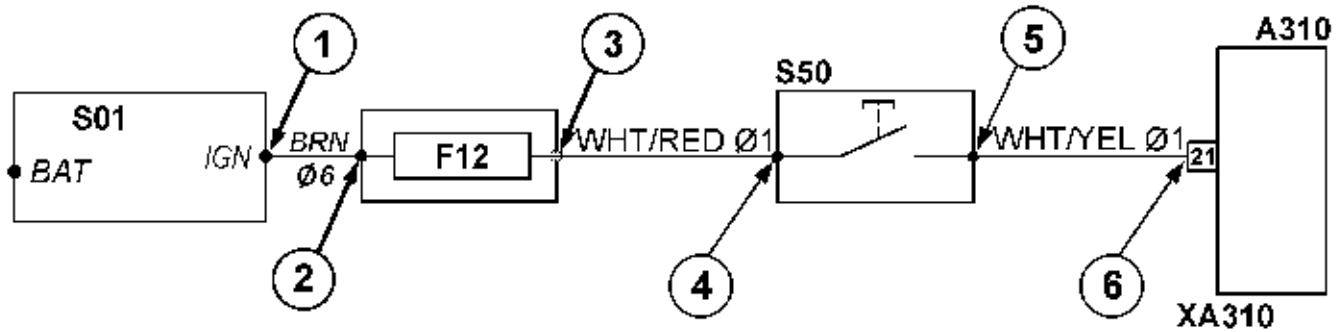
Check ground connection.

Result:

YES:Check " [B60 - Transmission Oil Temperature Sensor \(EHM or EHM II\)](#) " and replace if necessary.END OF TEST

NO:Check continuity to ground of black wire.

SE26B - Calibration Switch (EHM II), Diagnostic Schematic and Circuit Test



AT17378

Calibration switch test points

LEGEND:

- 1 - 6 Test points
- A310 EHM II control unit
- F12 15 amp fuse
- S01 Main switch
- S50 Calibration switch (EHM or EHM II)
- XA310 56-pin connector for EHM II control unit A310

Meet following requirements:

- Main switch in IGN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Calibration Switch Input Test

(1) Check voltage at IGN terminal of main switch S01

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: Perform [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#).

(2) Check voltage at fuse F12 input of fuse box

Action:

Location: [F01 to F15 - Fuse Box](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or break in brown wire between main switch and fuse box.

(3) Check voltage at fuse F12 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for failed fuse F12. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at white/red wire terminal 2 of 2-pin connector XS50

Action:

Location: [S50 - Calibration Switch \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check for corroded connections or break in white/red wire between 2-pin connector XS50 and fuse box.

(5) Check voltage at white/yellow wire terminal 1 of 2-pin connector XS50

Action:

Press [S50 - Calibration Switch \(EHM or EHM II\)](#).

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check " [S50 - Calibration Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(6) Check voltage at white/yellow wire terminal 21 at the 56-pin connector XA310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

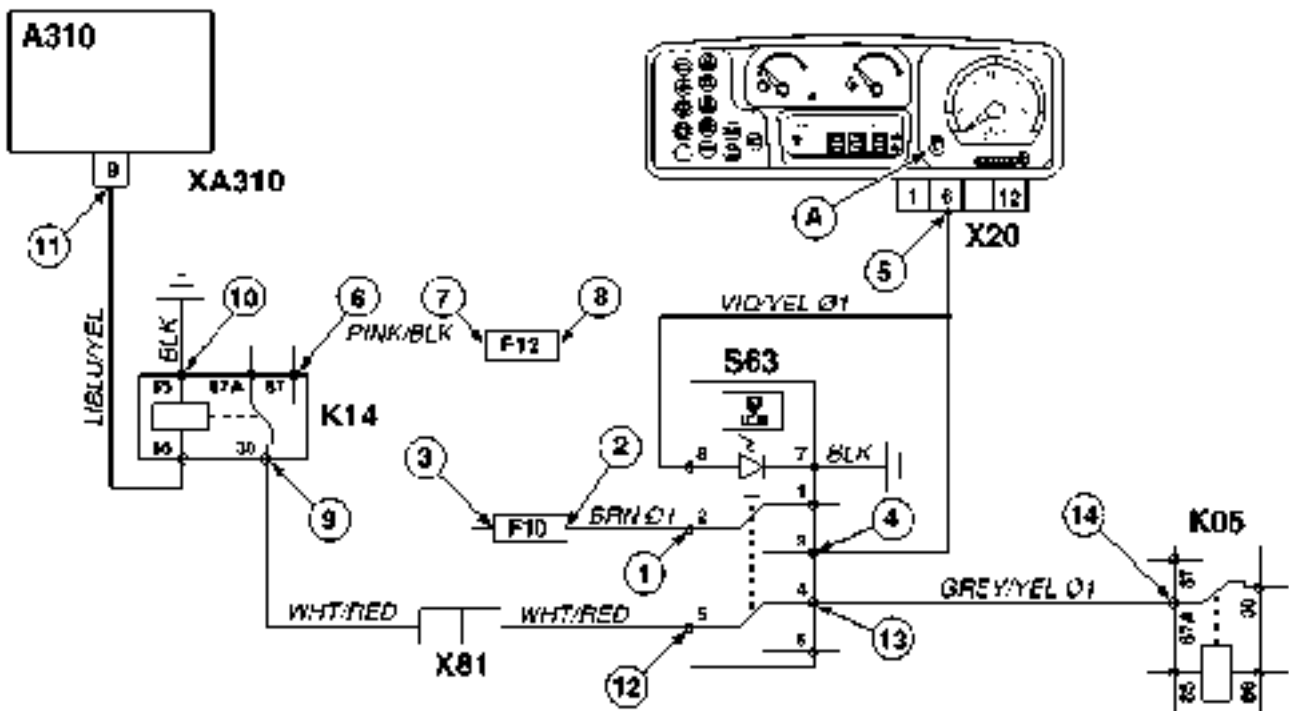
Result must be same as battery voltage.

Result:

YES: END OF TEST

NO: Check for corroded connections or break in white/yellow wire between calibration switch S50 and EHM II control unit.

SE26B - Front-Wheel Drive (EHM II), Diagnostic Schematic and Circuit Test



AT17378

Front-wheel drive circuit

LEGEND:

- 1 - 14 Test points
- A Front-wheel drive indicator light
- A310 EHM II control unit
- F10 7.5 amp fuse
- F12 15 amp fuse
- K05 Front-wheel drive relay
- K14 Front-wheel drive relay (EHM or EHM II)
- S63 Front-wheel drive switch (EHM or EHM II)
- X20 12-pin connector for instrument panel
- X81 1-pin interconnection between wiring harnesses W02 and W03 II
- XA310 56-pin connector for EHM II control unit A310

Meet following requirements:

- Main switch in IGN position.
- Gear shift lever in neutral position.
- PTO disengaged.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Front-Wheel Drive (EHM II), Circuit Test

Problem with the front-wheel drive indicator light (A), [GO TO 1](#).

Problem with the automatic front-wheel drive shut-off (above 18 km/h; 11.2 mph), [GO TO 6](#).

(1) Check voltage at brown wire terminal 2 of front-wheel drive switch S63

Action:

Location: [XS63 - 10-Pin Connector for Front-Wheel Drive Switch S63 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: [GO TO 2](#)

(2) Check voltage at F10 fuse output

Action:

Location: XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: Check brown wire between front-wheel drive switch S63 and F10.

NO: [GO TO 3](#)

(3) Check voltage at F10 fuse input

Action:

Result must be same as battery voltage.

Result:

YES: Check fuse F10 and replace if necessary. If fuse is good, check for corroded or loose terminals.

NO: Perform " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) ".

(4) Check voltage at violet/yellow wire terminal 3 of front-wheel drive switch S63

Action:

" [S63 - Front-Wheel Drive Switch \(EHM or EHM II\)](#) " must be actuated.

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check [S63 - Front-Wheel Drive Switch \(EHM or EHM II\)](#) and replace if necessary. If switch is good, check for corroded or loose terminals.

(5) Check voltage at violet/yellow wire terminal 6 of 12-pin connector X20 of instrument panel

Action:

Location: [X20 - 12-Pin Connector for Instrument Panel](#)

" [S63 - Front-Wheel Drive Switch \(EHM or EHM II\)](#) " must be actuated.

Result must be same as battery voltage.

Result:

YES: Check for corroded or loose terminals. If connections are good, check instrument panel and replace if necessary. [GO TO 6](#)

NO: Check for corroded connections or broken violet/yellow wire between 12-pin connector X20 and front-wheel drive switch S63.

(6) Check voltage at pink/black wire terminal 87 of relay K14

Action:

Location: [XK14 - 5-Pin Connector for Front-Wheel Drive Relay K14 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 9](#)

NO: [GO TO 7](#)

(7) Check voltage at F12 fuse output

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO:Check for corroded connections or broken wire between relay K14 and fuse F12.

(8) Check voltage at F12 fuse input

Action:

Result must be same as battery voltage.

Result:

YES:Check fuse F12 and replace if necessary. If fuse is good, check for corroded or loose terminals. [GO TO 9](#)

NO:Perform [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) .

(9) Check voltage at white/red wire terminal 30 of relay K14

Action:

Front-wheel drive disengaged.

Result must be same as battery voltage.

Result:

YES: [GO TO 12](#)

NO: [GO TO 10](#)

(10) Check ground connection at black wire terminal 85 of relay K14

Action:

Check ground connection.

Result:

YES: [GO TO 11](#)

NO: Check continuity to ground of black wire.

(11) Check continuity between light blue/yellow wire terminal 86 of relay K14 and terminal 9 of 56-pin connector XA310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Continuity must be present.

Result:

YES: Check " [K14 - Front-Wheel Drive Relay \(EHM or EHM II\)](#) " and replace if necessary. If relay is good, check for corroded or loose terminals and check " [B06 - Transmission Speed Sensor](#) ". [GO TO 12](#)

NO: Check for corroded connections or broken wire between terminal 86 of relay K14 and 56-pin connector XA310.

(12) Check voltage at white/red wire terminal 5 of front-wheel drive switch S63

Action:

Location: [XS63 - 10-Pin Connector for Front-Wheel Drive Switch S63 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 13](#)

NO: Check for corroded connections or broken wire between terminal 87 of relay K14 and terminal 5 of front-wheel drive switch S63.

(13) Check voltage at grey/yellow wire terminal 4 of front-wheel drive switch S63

Action:

Location: [XS63 - 10-Pin Connector for Front-Wheel Drive Switch S63 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 14](#)

NO: Check " [S63 - Front-Wheel Drive Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(14) Check voltage at grey/yellow wire terminal 87A of relay K05

Action:

Location: [XK05 - 5-Pin Connector for Front-Wheel Drive Relay](#)

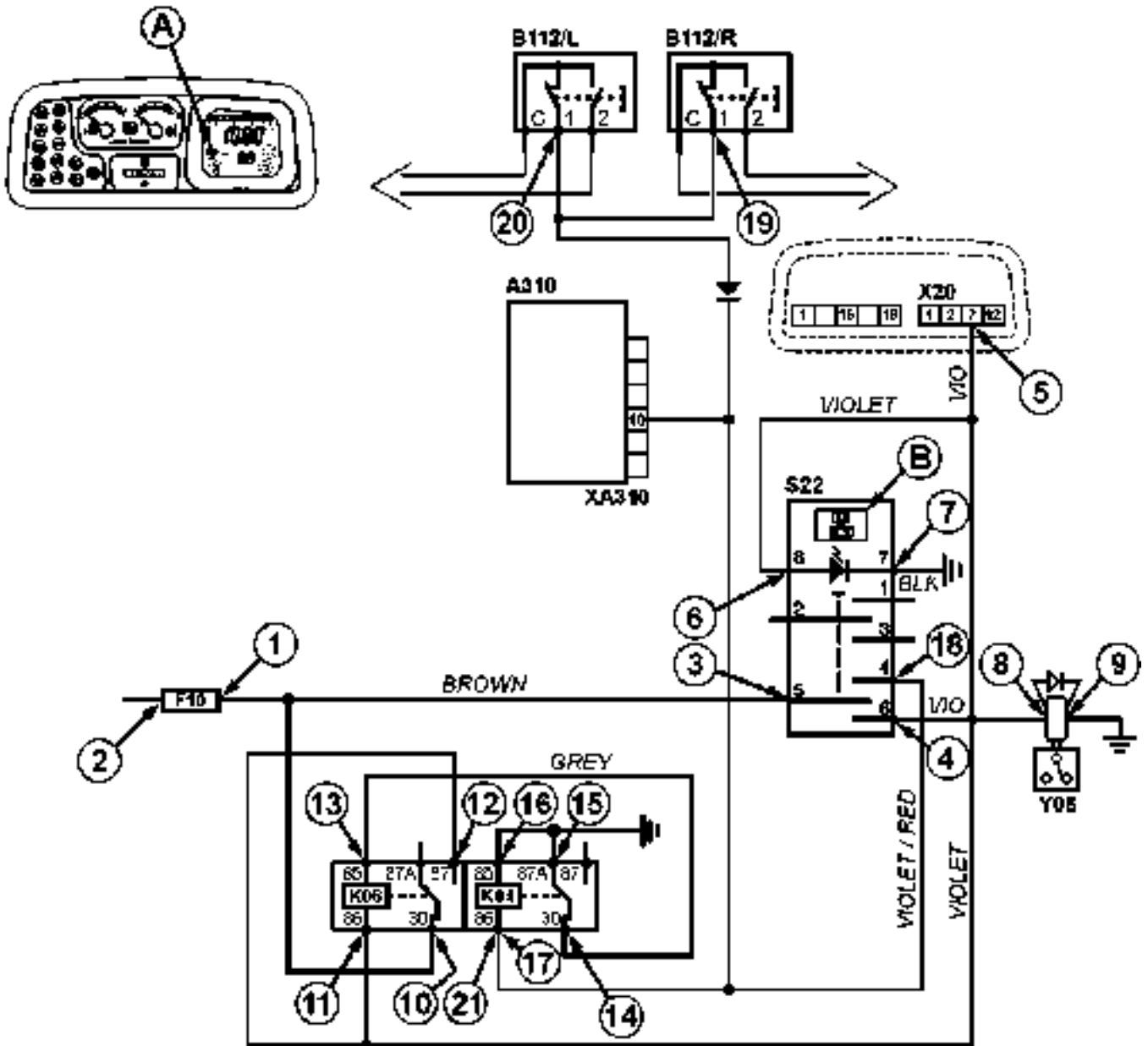
Result must be same as battery voltage.

Result:

YES: END OF TEST Perform " [SE16C - Stop Lights, Front-Wheel Drive Circuit and Parking Brake Circuit, Diagnostic Schematic and Circuit Test](#) " and start with test point [21](#) .

NO: Check for corroded connections or broken grey/yellow wire between terminal 87A of relay K05 and terminal 87 of relay K14.

SE26B - Differential Lock (EHM II), Diagnostic Schematic and Circuit Test



AT 17380

Differential lock circuit

LEGEND:

- 1 - 21 Test points
- A Differential lock indicator
- B Differential lock switch indicator
- A310 EHM II control unit
- B112/L Brake pedal switch (l.h. side)
- B112/R Brake pedal switch (r.h. side)
- F10 7.5 amp fuse
- K04 Differential lock relay (ON)

K06	Differential lock relay (OFF)
S22	Differential lock switch
X20	12-pin connector for instrument panel
XA310	12-pin connector for EHM II control unit A310
Y05	Differential lock solenoid valve

Meet following requirements:

- Main switch in IGN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Differential Lock Circuit Test

(1) Check voltage at fuse F10 output of fuse box

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: [GO TO 2](#)

(2) Check voltage at fuse F09 input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES:Check for failed fuse F10. If fuse is good, check for corroded or loose terminals. [GO TO 3](#)

NO:Perform " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) " .

(3) Check voltage at brown wire terminal 3 of 10-pin connector XS22

Action:

Location: [XS22 - 10-Pin Connector for Differential Lock Switch S22](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for corroded connections or broken brown wire between fuse F10 and 10-pin connector XS22.

(4) Check voltage at violet wire terminal 6 of 10-pin connector XS22

Action:

4.1

Press and hold "[S22 - Differential Lock Switch](#)" in **ON** position.

Result must be same as battery voltage.

Result:

YES: GO TO 4.2

NO: Check "[S22 - Differential Lock Switch](#)" and replace if necessary. If switch is good, check for corroded or loose terminals.

Action:

4.2

Press and hold "[S22 - Differential Lock Switch](#)" in **ON** position.

Differential lock indicator (A) lights up.

Result:

YES: GO TO 4.3

NO: [GO TO 5](#)

Action:

4.3

Press and hold "[S22 - Differential Lock Switch](#)" in **ON** position.

Differential lock switch indicator (B) lights up.

Result:

YES: GO TO 4.4

NO: [GO TO 6](#)

Action:

4.4

Press and hold "[S22 - Differential Lock Switch](#)" in **ON** position.

Differential lock indicator (A) lights up.

Result:

YES: [GO TO 8](#)

NO: [GO TO 10](#)

(5) Check voltage at violet wire terminal 7 of 12-pin connector X20

Action:

Location: [X20 - 12-Pin Connector for Instrument Panel](#)

Result must be same as battery voltage.

Result:

YES: Check "[SE02 - Power Supply to Instrument Panel, Diagnostic Schematic and Circuit Test](#)". [GO TO 4](#)

NO: Check for corroded connections or broken violet wire between fuse F10 and 10-pin connector XS22.

(6) Check voltage at violet wire terminal 8 of 10-pin connector XS22

Action:

Location: [XS22 - 10-Pin Connector for Differential Lock Switch S22](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: Check for corroded connections or broken violet wire between terminal 6 and terminal 8 of 10-pin connector XS22.

(7) Check ground connection at black wire terminal 7 of 10-pin connector XS22

Action:

Check ground connection.

Result:

YES: If ground connection or wire is good, bulb or "[S22 - Differential Lock Switch](#)" is bad. Replace if necessary. [GO TO 4](#)

NO: Check continuity to ground of black wire. [GO TO 4](#)

(8) Check voltage at violet wire terminal 2 of 4-pin connector XY05

Action:

Location: [XY05 - 4-Pin Connector for Differential Lock Solenoid Valve Y05](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 9](#)

NO: Check for corroded connections or broken violet wire between 4-pin connector XY05 and 10-pin connector XS22.

(9) Check ground connection at black wire terminal 1 of 4-pin connector XY05

Action:

Check ground connection.

Result:

YES: Check " [Y05 - Differential Lock Solenoid Valve](#) " and replace if necessary. [GO TO 10](#)

NO: Check continuity to ground of black wire.

(10) Check voltage at brown wire terminal 30 of 5-pin connector XK06

Action:

Location: [XK06 - 5-Pin Connector for Differential Lock Relay \(OFF\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 11](#)

NO: Check for corroded connections or broken brown wire between 4-pin connector XY05 and 5-pin connector XK06.

(11) Check voltage at violet wire terminal 86 of 5-pin connector XK06

Action:

Press and hold " [S22 - Differential Lock Switch](#) " in **ON** position.

Result must be same as battery voltage.

Result:

YES: [GO TO 12](#)

OK: Check for corroded connections or broken violet wire between 5-pin connector XK06 and 10-pin connector XS22.

(12) Check voltage at violet wire terminal 87 of 5-pin connector XK06

Action:

Press and hold " [S22 - Differential Lock Switch](#) " in **ON** position.

Result must be same as battery voltage.

Result:

YES: [GO TO 13](#)

NO: Check for corroded connections or broken violet wire between terminal 87 and terminal 86 of 5-pin connector XK06.

(13) Check ground connection at grey wire terminal 85 of 5-pin connector XK06

Action:

Check ground connection.

Result:

YES: Check " [K06 - Differential Lock Relay \(OFF\)](#) " and replace if necessary.

NO: [GO TO 14](#)

(14) Check ground connection at grey wire terminal 30 of 5-pin connector XK04

Action:

Location: [XK04 - 5-Pin Connector for Differential Lock Relay \(ON\)](#)

Check ground connection.

Result:

YES: Check for corroded connections or broken grey wire between terminal 85 of 5-pin connector XK04 and terminal 30 of 5-pin connector XK06.

NO: [GO TO 15](#)

(15) Check ground connection at black wire terminal 87A of 5-pin connector XK04

Action:

Check ground connection.

Result:

YES: [GO TO 16](#)

NO: Check continuity to ground of black wire.

(16) Check ground connection at black wire terminal 85 of 5-pin connector XK04

Action:

Check ground connection.

Result:

YES: [GO TO 17](#)

NO: Check continuity to ground of black wire.

(17) Check voltage at violet/red wire terminal 86 of 5-pin connector XK04

Action:

17.1

→NOTE:

Do not depress the brake pedals.

Result must be 0 volt.

Result:

YES: GO TO 17.2

NO: [GO TO 21](#)

Action:

17.2

Press and hold "[S22 - Differential Lock Switch](#)" in **OFF** position.

Result must be same as battery voltage.

Result:

YES:GO TO 17.3

NO: [GO TO 18](#)

Action:

17.3

→NOTE:

Depress the r.h. brake pedal.

Result must be same as battery voltage.

Result:

YES:GO TO 17.4

NO: [GO TO 19](#)

Action:

17.4

→NOTE:

Depress the l.h. brake pedal.

Result must be same as battery voltage.

Result:

YES: Check " [K04 - Differential Lock Relay \(ON\)](#) " and replace if necessary. Perform " [24/12-Speed Transmission - Pressure Tests](#) ". See Section 251, Group 15. END OF TEST

NO: [GO TO 20](#)

(18) Check voltage at violet/red wire terminal 4 of 10-pin connector XS22

Action:

Location: [XS22 - 10-Pin Connector for Differential Lock Switch S22](#)

Press and hold " [S22 - Differential Lock Switch](#) " in **OFF** position.

Result must be same as battery voltage.

Result:

YES: Check for corroded connections or broken violet/red wire between terminal 86 of 5-pin connector XK04 and terminal 4 of 10-pin connector XS22. [GO TO 17](#)

NO: Check " [S22 - Differential Lock Switch](#) " and replace if necessary. If switch is good, check for corroded or loose terminals. [GO TO 17](#)

(19) Check voltage at violet/red wire terminal XB112/R-1 of 3/1 pin connectors XB112/R

Action:

Location: [XB112 - 3/1-Pin Connectors for Brake Pedal Switches B112](#)

→NOTE:

Depress the r.h. brake pedal.

Result must be same as battery voltage.

Result:

YES:Check for corroded connections or broken violet/red wire between terminal XB112/R-1 of 3/1 pin connectors XB112/R and " [D101 - Differential Lock Diode](#) ".Check for corroded connections or broken violet/red wire between " [D101 - Differential Lock Diode](#) " and terminal 86 of 5-pin connector XK06. [GO TO 17](#)

NO:Perform " [SE16C - Stop Lights, Diagnostic Schematic and Circuit Test](#) ". [GO TO 17](#)

(20) Check voltage at violet/red wire terminal XB112/L-1 of 3/1 pin connectors XB112/L

Action:

→NOTE:

Depress the l.h. brake pedal.

Result must be same as battery voltage.

Result:

YES:Check for corroded connections or broken violet/red wire between terminal XB112/L-1 of 3/1 pin connectors XB112/L and " [D101 - Differential Lock Diode](#) ".Check for corroded connections or broken violet/red wire between " [D101 - Differential Lock Diode](#) " and terminal 86 of 5-pin connector XK06. [GO TO 17](#)

NO:Perform " [SE16C - Stop Lights, Diagnostic Schematic and Circuit Test](#) ". [GO TO 17](#)

(21) Check voltage at violet/red wire terminal 86 of 5-pin connector XK04

Action:

21.1

Disconnect "[XS22 - 10-Pin Connector for Differential Lock Switch S22](#)".

Result must be 0 volt.

Result:

YES:Check "[S22 - Differential Lock Switch](#)" and replace if necessary. If switch is good, check for corroded or loose terminals.

NO:GO TO 21.2

Action:

21.2

Disconnect "[XA310 - 56-Pin Connector for EHM II Control Unit A310](#)".

Result must be 0 volt.

Result:

YES:Check "[A310 - EHM II Control Unit](#)" and replace if necessary. Check for corroded or loose terminals.

NO:GO TO 21.3

Action:

21.3

Disconnect violet/red wire terminal XB112/R-1 of 3/1 pin connectors XB112/R. See "[XB112 - 3/1-Pin Connectors for Brake Pedal Switches B112](#)".

Result must be 0 volt.

Result:

YES:Check "[B112 - Brake Pedal Switches](#)" and replace if necessary. If switch is good, check for corroded or loose terminals.

NO:GO TO 21.4

Action:

21.4

Disconnect violet/red wire terminal XB112/L-1 of 3/1 pin connectors XB112/L. See "[XB112 - 3/1-Pin Connectors for Brake Pedal Switches B112](#)".

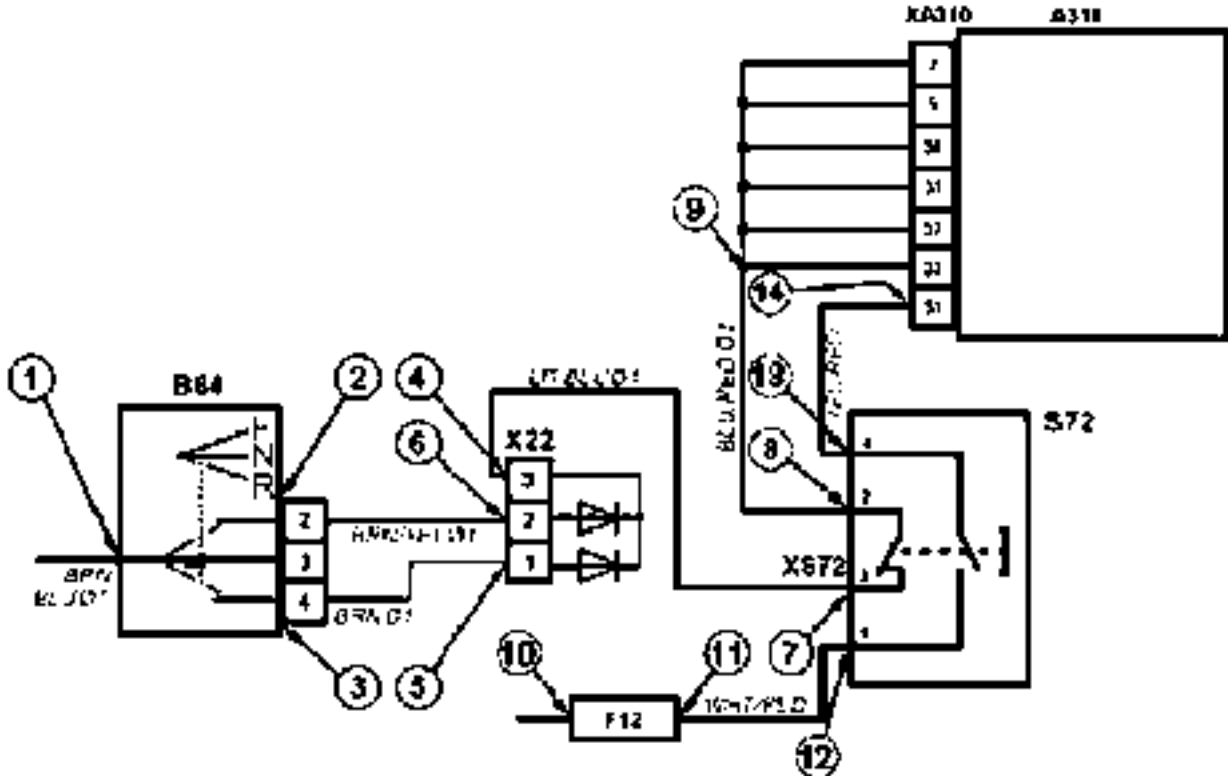
Result must be 0 volt.

Result:

YES: Check "[B112 - Brake Pedal Switches](#)" and replace if necessary. If switch is good, check for corroded or loose terminals.

NO: Check violet/red wire for short to 12 volts. END OF TEST

SE26B - Clutch Pedal Switch (EHM II), Diagnostic Schematic and Circuit Test



AT 17201

Clutch pedal switch test points

LEGEND:

- 1 - 14 Test points
- A310 EHM II control unit
- B64 Reverse drive lever switch (EHM or EHM II)
- S72 Clutch pedal switch (EHM or EHM II)
- X22 3-pin connector
- XA310 56-pin connector for EHM II control unit A310

Meet following requirements:

- Main switch in IGN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Clutch Pedal Switch Test

(1) Check voltage at brown/blue wire terminal of reverse drive lever switch B64

Action:

Location: [XB64 - 4-Pin Connector for Reverse Drive Lever Switch B64 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: Check " [SE26A - Reverse Drive Lever \(EHM\), Diagnostic Schematic and Circuit Test](#) ".

(2) Check voltage at brown/yellow wire terminal of reverse drive lever switch B64

Action:

Put reverse drive lever in forward position.

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check " [B64 - Reverse Drive Lever Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(3) Check voltage at brown wire terminal of reverse drive lever switch B64

Action:

Put reverse drive lever in reverse position.

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check " [B64 - Reverse Drive Lever Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(4) Check voltage at brown/yellow wire terminal 2 of 3-pin connector X22

Action:

Location: [X22 - 3-Pin Connector for Diodes](#)

Put reverse drive lever in forward position.

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check for corroded connections or broken brown/yellow wire between reverse drive lever switch and X22.

(5) Check voltage at brown wire terminal 1 of 3-pin connector X22

Action:

Put reverse drive lever in reverse position.

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded connections or broken brown wire between reverse drive lever switch and X22.

(6) Check voltage at light blue wire terminal 3 of 3-pin connector X22

Action:

6.1

Put reverse drive lever in reverse position.

Result must be same as battery voltage.

Result:

YES:GO TO 6.2

NO:Check diode between terminal 1 and 3. Replace if necessary

Action:

6.2

Put reverse drive lever in forward position.

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO:Check diode between terminal 2 and 3. Replace if necessary

(7) Check voltage at light blue wire terminal of clutch pedal switch S72

Action:

Location: [XS72 - 4/1-Pin Connectors for Clutch Pedal Switch S72 \(EHM or EHM II\)](#)

Put reverse drive lever in reverse position.

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO:Check for corroded connections or broken light blue wire between X22 and clutch pedal switch S72.

(8) Check voltage at blue/red wire terminal of clutch pedal switch S72

Action:

8.1

Put reverse drive lever in reverse position without depressing the clutch pedal.

Result must be same as battery voltage.

Result:

YES:GO TO 8.2

NO:Check " [S72 - Clutch Pedal Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

Action:

8.2

Put reverse drive lever in reverse position with depressing the clutch pedal.

Result must be 0 volt.

Result:

YES: [GO TO 9](#)

NO:Check " [S72 - Clutch Pedal Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(9) Check voltage at blue/red wire terminals 2, 5, 30, 31,32 and 33 of 56-pin connector XA310 for EHM II control unit

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Put reverse drive lever in reverse position.

Result must be same as battery voltage.

Result:

YES:GO TO 10.

NO:Check for corroded connections or broken blue/red wire between 56-pin connector XA310 and clutch pedal switch S72.

(10) Check voltage at F12 input

Action:

Result must be same as battery voltage.

Result:

YES:GO TO 11.

NO:Perform [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#)

(11) Check voltage at F12 fuse output

Action:

Result must be same as battery voltage.

Result:

YES:GO TO 12.

NO:Check fuse F12 and replace if necessary. If fuse is good, check for corroded or loose terminals.

(12) Check continuity between white/red wire terminal 1 of 4-pin connector XS72 and fuse F12

Action:

Continuity must be present.

Result:

YES:GO TO 13.

NO:Check for corroded connections or broken white/red wire between connector XS72 and fuse F12.

(13) Check voltage at yellow/red wire terminal 4 of 4-pin connector XS72

Action:

Result must be same as battery voltage.

Result:

YES:GO TO 14.

NO:Check the switch S72 for proper functioning, repair or replace as necessary.

(14) Check voltage at yellow/red wire terminal 51 of 56-pin connector XA310

Action:

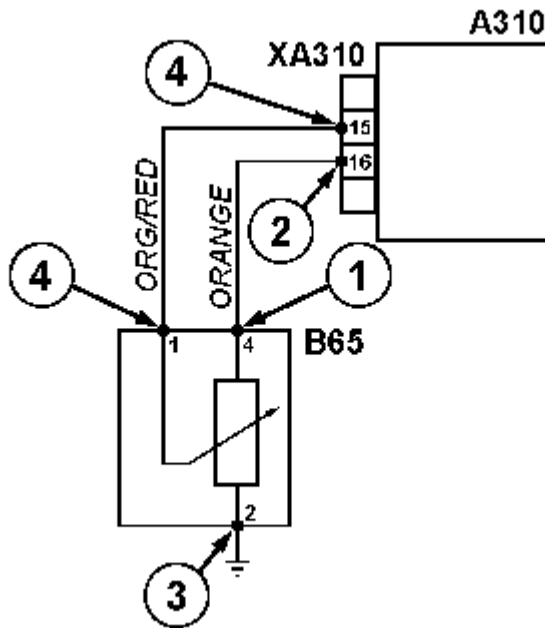
Result must be same as battery voltage.

Result:

YES:END OF TEST.

NO:Check continuity between yellow/red wire terminal 4 of 4-pin connector XS72 and terminal 51 of 56-pin connector XA310.

SE26B - Clutch Pedal Potentiometer (EHM II), Diagnostic Schematic and Circuit Test



AT17382

Clutch pedal potentiometer B65

LEGEND:

- 1 - 4 Test points
- A310 EHM II control unit
- B65 Clutch pedal potentiometer (EHM or EHM II)
- XA310 56-pin connector for EHM II control unit A310

Meet following requirements:

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Clutch Pedal Potentiometer Test

(1) Check voltage at orange wire terminal 4 of 6-pin connector XB65

Action:

Location: [XB65 - 6-Pin Connector for Clutch Pedal Potentiometer B65 \(EHM or EHM II\)](#)

Result must be between 4.75 - 5.25 volts.

Result:

YES: [GO TO 3](#)

NO: [GO TO 2](#)

(2) Check voltage at orange wire terminal 16 of 56-pin connector XA310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Result must be between 4.75 - 5.25 volts.

Result:

YES: Check for corroded connections or broken wire between 56-pin connector XA310 and 6-pin connector XB65.

NO: Check " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) ".

(3) Check ground connection at black wire terminal 2 of 6-pin connector XB65

Action:

Check ground connection.

Result:

YES: [GO TO 4](#)

NO: Check continuity to ground of black wire.

(4) Check continuity at orange/red wire between terminal 15 of 56-pin connector XA310 and terminal 1 of 6-pin connector XB65

Action:

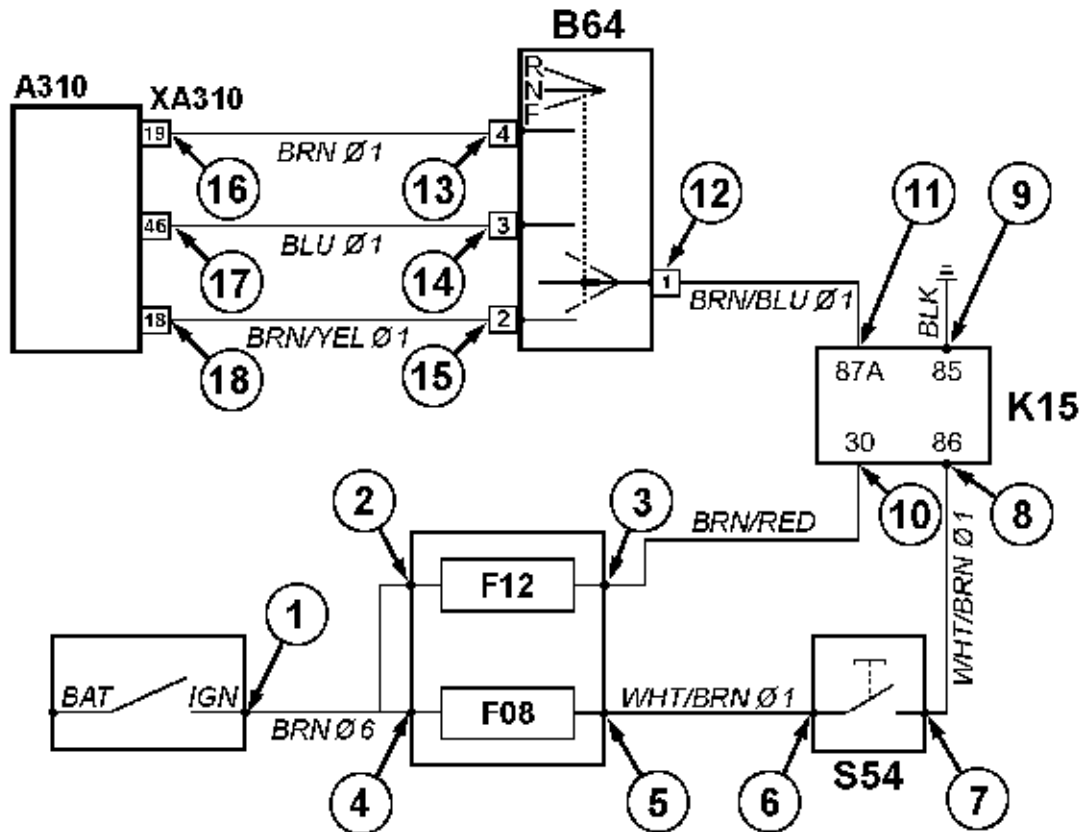
Continuity must be present.

Result:

YES: Check " [B65 - Clutch Pedal Potentiometer \(EHM or EHM II\)](#) " and replace if necessary.
END OF TEST.

NO: Check for corroded connections or broken orange/red wire between 56-pin connector XA310 and 6-pin connector XB65.

SE26B - Reverse Drive Lever (EHM II), Diagnostic Schematic and Circuit Test



AT17383

Reverser drive lever test points

LEGEND:

- 1 - 18 Test points
- A310 EHM II control unit
- B64 Reverse drive lever switch (EHM or EHM II)
- F08 7.5 amp fuse
- F12 15 amp fuse
- K15 Declutch relay (EHM or EHM II)
- S01 Main switch
- S54 Declutch switch on range shift lever
- XA310 56-pin connector for EHM II control unit A310

Meet following requirements:

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Reverse Drive Lever Input Test

(1) Check voltage at IGN terminal of main switch S01

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be same as battery voltage.

Result:

YES:GO TO 2

NO:Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at fuse F12 input of fuse box

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO:Check for corroded connections or broken brown wire between main switch and fuse box.

(3) Check voltage at fuse F12 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO:Check for failed fuse F12. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at fuse F08 input of fuse box

Action:

Location: XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check for corroded connections or broken brown wire between main switch and fuse box.

(5) Check voltage at fuse F08 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for failed fuse F08. If fuse is good, check for corroded or loose terminals.

(6) Check voltage at input of declutch switch S54 on range shift lever

Action:

Location: [XS54 - 1-Pin Connector for Declutch Switch S54 on Range Shift Lever \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: Check for corroded connections or broken white/brown wire between declutch switch on range shift lever and fuse box.

(7) Check voltage at output of declutch switch S54 on range shift lever

Action:

Location: [S54 - Declutch Switch on Range Shift Lever \(EHM or EHM II\)](#)

Press and hold declutch switch on range shift lever.

Result must be same as battery voltage.

Result:

YES: [GO TO 8](#)

NO:Check " [S54 - Declutch Switch on Range Shift Lever \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(8) Check voltage at white/brown wire terminal 86 of relay K15

Action:

Location: [XK15 - 5-Pin Connector for Declutch Relay K15 \(EHM or EHM II\)](#)

Press and hold declutch switch on range shift lever.

Result must be same as battery voltage.

Result:

YES: [GO TO 9](#)

NO:Check for corroded connections or broken white/brown wire between declutch switch on range shift lever and relay K15.

(9) Check ground connection at terminal 85 of relay K15

Action:

Check ground connection.

Result:

YES:Check relay K15 and replace if necessary. If relay is good, check for corroded or loose terminals. [GO TO 10](#)

NO:Check ground connection on terminal 85 black wire.

(10) Check voltage at brown/red wire terminal 30 of relay K15

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 11](#)

NO: Check for corroded connections or broken brown/red wire between fuse box and relay K15.

(11) Check voltage at brown/blue wire terminal 87A of relay K15

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 12](#)

NO: Check " [K15 - Declutch Relay \(EHM or EHM II\)](#) " and replace if necessary. If relay is good, check for corroded or loose terminals.

(12) Check voltage at brown/blue wire terminal 1 of 4-pin connector XB64

Action:

Location: [XB64 - 4-Pin Connector for Reverse Drive Lever Switch B64 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 13](#)

NO: Check for corroded connections or broken brown/blue wire between reverse drive lever switch and relay K15.

(13) Check voltage at brown wire terminal 4 of 4-pin connector XB64

Action:

Put reverse drive lever in reverse position.

Result must be same as battery voltage.

Result:

YES: [GO TO 14](#)

NO: Check reverse drive lever switch and replace if necessary. If switch is good, check for corroded or loose terminals.

(14) Check voltage at blue wire terminal 3 of 4-pin connector XB64

Action:

Put reverse drive lever in neutral position.

Result must be same as battery voltage.

Result:

YES: [GO TO 15](#)

NO: Check " [B64 - Reverse Drive Lever Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(15) Check voltage at brown/yellow wire terminal 2 of 4-pin connector XB64

Action:

Put reverse drive lever in forward position.

Result must be same as battery voltage.

Result:

YES: [GO TO 16](#)

NO: Check " [B64 - Reverse Drive Lever Switch \(EHM or EHM II\)](#) " and replace if necessary. If switch is good, check for corroded or loose terminals.

(16) Check voltage at brown wire terminal 19 of 56-pin connector XA310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Put reverse drive lever in reverse position.

Result must be same as battery voltage.

Result:

YES: [GO TO 17](#)

NO: Check for corroded connections or broken brown wire between 4-pin connector XB64 and 56-pin connector XA310.

(17) Check voltage at blue wire terminal 46 of 56-pin connector XA310

Action:

Put reverse drive lever in neutral position.

Result must be same as battery voltage.

Result:

YES: [GO TO 18](#)

NO: Check for corroded connections or broken blue wire between 4-pin connector XB64 and 56-pin connector XA310.

(18) Check voltage at brown/yellow wire terminal 18 of 56-pin connector XA310

Action:

Put reverse drive lever in forward position.

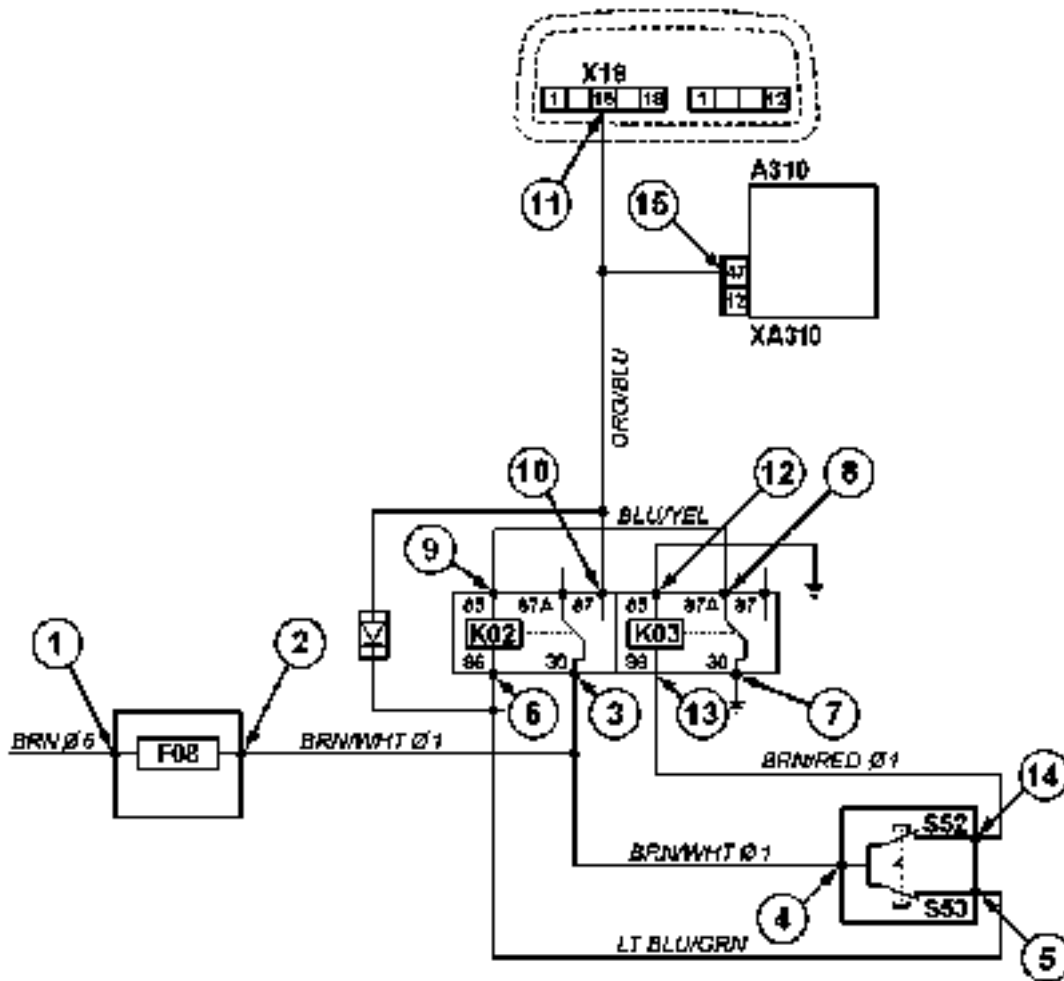
Result must be same as battery voltage.

Result:

YES: END OF TEST.

NO: Check for corroded connections or broken brown/yellow wire between 4-pin connector XB64 and 56-pin connector XA310.

SE26B - Hi-Lo Selection Switches (EHM II), Diagnostic Schematic and Circuit Test



AT 17384

Hi-Lo selection switches test points

LEGEND:

- 1 - 15 Test points
- A310 EHM II control unit
- F08 7.5 amp fuse
- K02 Hi-Lo relay (ON)
- K03 Hi-Lo relay (OFF)
- S52 Hi-Lo switch (low)
- S53 Hi-Lo switch (high)
- X19 18-pin connector for instrument panel
- XA310 56-pin connector for EHM II control unit A310

Meet following requirements:

- Main switch in IGN position.
- Hi-Lo switch on "Hi" position.

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Hi-Lo Circuit Test

(1) Check voltage at fuse F08 input of fuse box

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO:Check for corroded connections or broken brown wire between main switch and fuse box.If wire is good, check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at fuse F08 output of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO:Check for failed fuse F08. If fuse is good, check for corroded or loose terminals.

(3) Check voltage at brown/white wire terminal 30 of relay K02

Action:

Location: [XK02 - 5-Pin Connector for Hi-Lo Relay \(ON\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO: Check for corroded connections or broken brown/white wire between fuse box and relay K02.

(4) Check voltage at brown/white wire terminal 2 of 3-pin connector X23

Action:

Location: [X23 - 3-Pin Connector for Hi-Lo Switches \(S53 and S52\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check for corroded connections or broken brown/white wire between fuse box and terminal 2 of 3-pin connector X23.

(5) Check voltage at light blue/green wire terminal 3 of 3-pin connector X23

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded or loose terminals. Replace "[S53 - Hi-Lo Switch \(high\)](#)" if necessary.

(6) Check voltage at light blue/green wire terminal 86 of relay K02

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 7](#)

NO: Check for corroded connections or broken light blue/green wire between relay K02 and 3-pin connector X23.

(7) Check ground connection at black wire terminal 30 of relay K03

Action:

Location: [XK03 - 5-Pin Connector for Hi-Lo Relay \(OFF\)](#)

Check ground connection.

Result:

YES: [GO TO 8](#)

NO: Check continuity to ground of black wire.

(8) Check ground connection at blue/yellow wire terminal 87A of relay K03

Action:

Check ground connection.

Result:

YES: [GO TO 9](#)

NO: Check " [K03 - Hi-Lo Relay \(OFF\)](#) " and replace if necessary. If relay is good, check for corroded or loose terminals.

(9) Check ground connection at blue/yellow wire terminal 85 of relay K02

Action:

Check ground connection.

Result:

YES: [GO TO 10](#)

NO: Check for corroded connections or broken blue/yellow wire between relay K02 and relay K03.

(10) Check voltage at orange/blue wire terminal 87 of relay K02

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 11](#)

NO: Check " [K02 - Hi-Lo Relay \(ON\)](#) " and replace if necessary. If relay is good, check for corroded or loose terminals.

(11) Check voltage at orange/blue wire terminal 15 of 18-pin instrument panel connector X19

Action:

Location: [X19 - 18-Pin Connector for Instrument Panel](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 14](#)

NO: Check for corroded connections or broken orange/blue wire between instrument panel and relay K02.

(12) Check ground connection at black wire terminal 85 of relay K03

Action:

Check ground connection.

Result:

YES: [GO TO 15](#)

NO: Check continuity to ground of black wire.

(13) Check ground connection at red/brown wire terminal 86 of relay K03

Action:

Check ground connection.

Result:

YES: GO TO 16

NO: Check " [K03 - Hi-Lo Relay \(OFF\)](#) " and replace if necessary. If relay is good, check for corroded or loose terminals.

(14) Check ground connection at red/brown wire terminal 1 of 3-pin connector X23

Action:

Location: [X23 - 3-Pin Connector for Hi-Lo Switches \(S53 and S52\)](#)

Check ground connection.

Result:

YES: GO TO 17

NO: Check for corroded connections or broken red/brown wire between 3-pin connector X23 and relay K03.

(15) Check voltage at orange/blue wire terminal 47 of 56-pin connector XA310 of EHM II control unit A310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Result must be same as battery voltage.

Result:

YES: Perform " [24/12-Speed Transmission - Pressure Tests](#) ". See Section 251, Group 15.END OF TEST.

NO: Check for corroded connections or broken orange/blue wire between 56-pin connector XA310 and relay K02.

(1) Check resistance between pink/green wire terminal 7 and pink/blue wire terminal 41 of 56-pin connector XA310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Item	Measurement	Specification
Proportional valve		
Solenoid valve:	Resistance	approx. 2.2 ohms

Result:

YES: [GO TO 4](#)

NO: [GO TO 2](#)

(2) Check continuity between pink/green wire terminal 7 of 56-pin connector XA310 and pink/green wire terminal 2 of 2-pin connector XY51

Action:

Location: [XY51 - 2-Pin Connector for Reverse Clutch Solenoid Valve Y51 \(EHM or EHM II\)](#)

Continuity must be present.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken pink/green wire between connectors XA310 and XY51.

(3) Check continuity between pink/blue wire terminal 41 of 56-pin connector XA310 and pink/blue wire terminal 1 of 2-pin connector XY51

Action:

Continuity must be present.

Result:

YES:Check " [Y51 - Reverse Clutch Solenoid Valve \(EHM or EHM II\)](#) " and replace if necessary.
[GO TO 4](#)

NO:Check for corroded connections or broken pink/blue wire between connectors XA310 and XY51.

(4) Check continuity between pink/blue wire terminal 1 and pink/green wire terminal 2 of 2-pin connector XY51

Action:

Main switch in IGN position.

Parking brake engaged.

Reverse drive lever in reverse position.

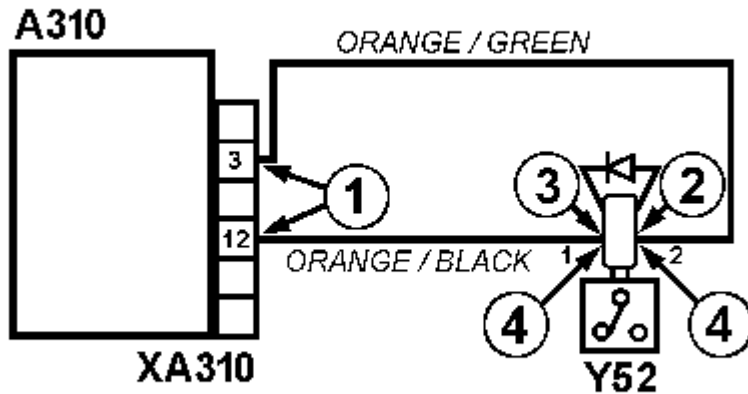
Result must be same as battery voltage.

Result:

YES:END OF TEST

NO:Perform following tests: • [SE26B - Hi-Lo Selection Switches \(EHM II\), Diagnostic Schematic and Circuit Test](#) • [SE26B - Reverse Drive Lever \(EHM II\), Diagnostic Schematic and Circuit Test](#)

SE26B - Forward Low Clutch (EHM II), Diagnostic Schematic and Circuit Test



AT17386

Forward low clutch circuit test

LEGEND:

- 1 - 4 Test points
- A310 EHM II control unit
- XA310 56-pin connector for EHM II control unit A310
- Y52 Forward low clutch solenoid valve (EHM or EHM II)

Meet following requirements:

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Forward Low Clutch Solenoid Valve Circuit Test

(1) Check resistance between orange/black wire terminal 12 and orange/green wire terminal 3 of 56-pin connector XA310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Item	Measurement	Specification
Proportional valve		
Solenoid valve:	Resistance	approx. 2.2 ohms

Result:

YES: [GO TO 4](#)

NO: [GO TO 2](#)

(2) Check continuity between orange/green wire terminal 3 of 56-pin connector XA310 and orange/green wire terminal 2 of 2-pin connector XY52

Action:

Location: [XY52 - 2-Pin Connector for Forward Low Clutch Solenoid Valve Y52 \(EHM or EHM II\)](#)

Continuity must be present.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken orange/green wire between connectors XA310 and XY52.

(3) Check continuity between orange/black wire terminal 12 of 56-pin connector XA310 and orange/black wire terminal 1 of 2-pin connector XY52

Action:

Continuity must be present.

Result:

YES:Check " [Y52 - Forward Low Clutch Solenoid Valve \(EHM or EHM II\)](#) " and replace if necessary. [GO TO 4](#)

NO:Check for corroded connections or broken orange/black wire between connectors XA310 and XY52.

(4) Check continuity between orange/black wire terminal 1 and orange/green wire terminal 2 of 2-pin connector XY52

Action:

Main switch in IGN position.

Parking brake engaged.

Reverse drive lever in forward position.

Hi-Lo switch in "Lo" position.

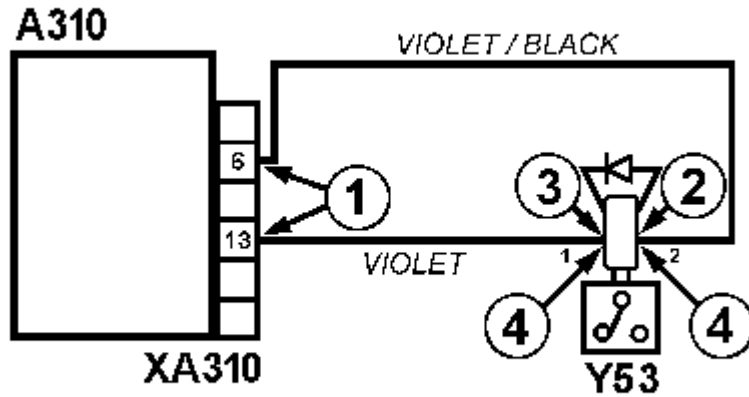
Result must be same as battery voltage.

Result:

YES:END OF TEST

NO:Perform following tests: • [SE26B - Hi-Lo Selection Switches \(EHM II\), Diagnostic Schematic and Circuit Test](#) • [SE26B - Reverse Drive Lever \(EHM II\), Diagnostic Schematic and Circuit Test](#)

SE26B - Forward High Clutch (EHM II), Diagnostic Schematic and Circuit Test



AT17387

Forward high clutch circuit test

LEGEND:

- 1 - 4 Test points
- A310 EHM II control unit
- XA310 56-pin connector for EHM II control unit A310
- Y53 Forward high clutch solenoid valve (EHM or EHM II)

Meet following requirements:

- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Forward High Clutch Solenoid Valve Circuit Test

(1) Check resistance between violet wire terminal 13 and violet/black wire terminal 6 of 56-pin connector XA310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Item	Measurement	Specification
Proportional valve		
Solenoid valve:	Resistance	approx. 2.2 ohms

Result:

YES: [GO TO 4](#)

NO: [GO TO 2](#)

(2) Check continuity between violet/black wire terminal 6 of 56-pin connector XA310 and violet/black wire terminal 2 of 2-pin connector XY53

Action:

Location: [XY53 - 2-Pin Connector for Forward High Clutch Solenoid Valve Y53 \(EHM or EHM II\)](#)

Continuity must be present.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken violet/black wire between connectors XA310 and XY53.

(3) Check continuity between violet wire terminal 13 of 56-pin connector XA310 and violet wire terminal 1 of 2-pin connector XY53

Action:

Continuity must be present.

Result:

YES:Check " [Y53 - Forward High Clutch Solenoid Valve \(EHM or EHM II\)](#) " and replace if necessary. [GO TO 4](#)

NO:Check for corroded connections or broken violet wire between connectors XA310 and XY53.

(4) Check continuity between violet/black wire terminal 2 and violet wire terminal 1 of 2-pin connector XY53

Action:

Main switch in IGN position.

Parking brake engaged.

Reverse drive lever in forward position.

Hi-Lo switch in "Hi" position.

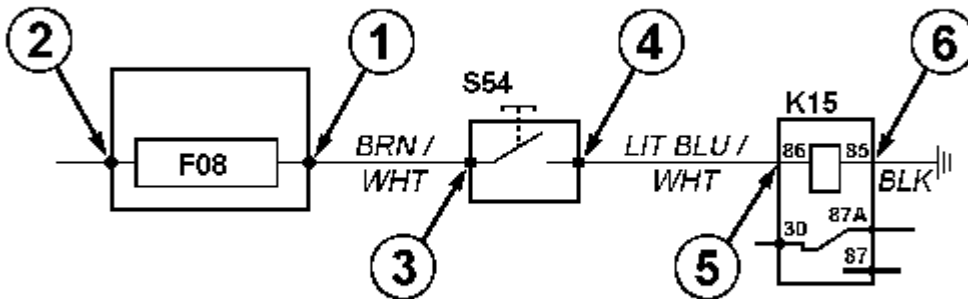
Result must be same as battery voltage.

Result:

YES:END OF TEST

NO:Perform following tests: • [SE26A - Hi-Lo Selection Switches \(EHM\), Diagnostic Schematic and Circuit Test](#) • [SE26A - Reverse Drive Lever \(EHM\), Diagnostic Schematic and Circuit Test](#)

SE26B - Declutch Switch on Range Shift Lever (EHM II), Diagnostic Schematic and Circuit Test



AT17354

Declutch switch on range shift lever, circuit test

LEGEND:

- 1 - 6 Test points
- F08 7.5 amp fuse
- K15 Declutch relay (EHM or EHM II)
- S54 Declutch switch on range shift lever (EHM or EHM II)

Meet following requirements:

- Main switch in RUN (1) position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Declutch Switch on Range Shift Lever, Circuit Test

(1) Check voltage at fuse F08 output of fuse box

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: [GO TO 2](#)

(2) Check voltage at fuse F08 input of fuse box

Action:

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#) Check for failed fuse F08. If fuse is good, check for corroded or loose terminals.

NO:Perform " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) ".

(3) Check voltage at brown/white wire terminal of declutch switch S54 on range shift lever

Action:

Result must be same as battery voltage.

Result:

YES:GO TO 4

NO:Check for corroded connections or broken white/brown wire between declutch switch on range shift lever and fuse box.

(4) Check voltage at output of declutch switch S54 on range shift lever

Action:

Press and hold " [S54 - Declutch Switch on Range Shift Lever \(EHM or EHM II\)](#) ".

Result must be same as battery voltage.

Result:

YES:GO TO 5

NO:Check for failed declutch switch. If declutch switch is good, check for corroded or loose terminals.

(5) Check voltage at white/brown wire terminal 86 of relay K15

Action:

Location: [XK15 - 5-Pin Connector for Declutch Relay K15 \(EHM or EHM II\)](#)

Press and hold " [S54 - Declutch Switch on Range Shift Lever \(EHM or EHM II\)](#) ".

Result must be same as battery voltage.

Result:

YES:GO TO 6

NO:Check for corroded connections or broken white/brown wire between declutch switch on range shift lever and relay K15.

(6) Check ground connection at terminal 85 of relay K15

Action:

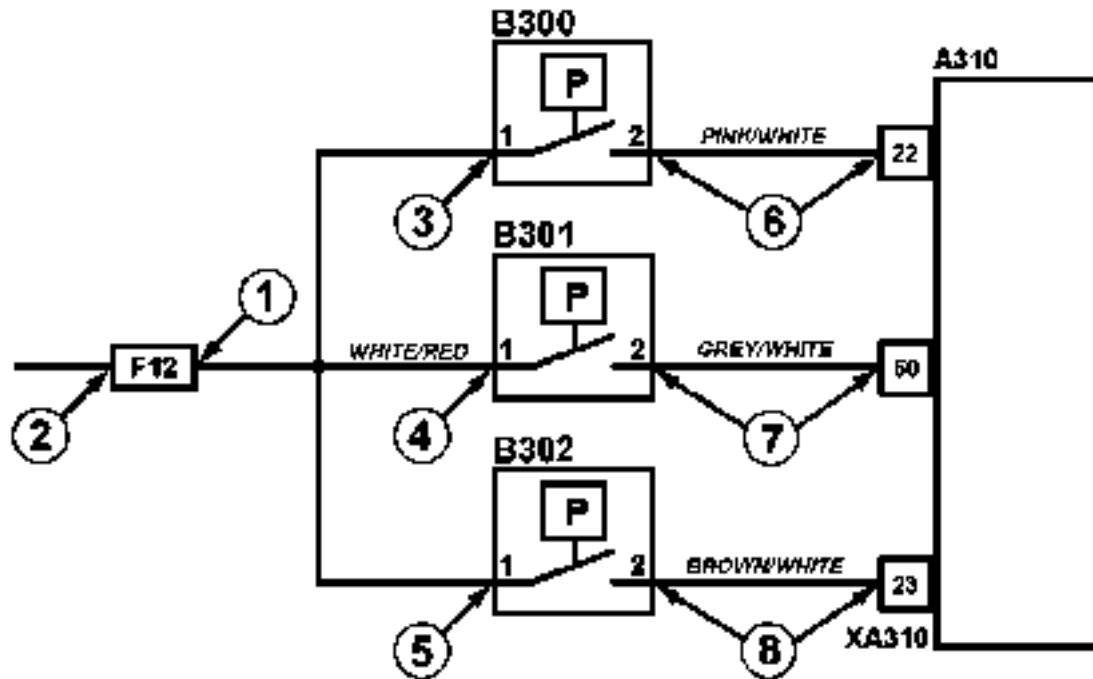
Check ground connection.

Result:

YES:Check [K15 - Declutch Relay \(EHM or EHM II\)](#) and replace if necessary. If relay is good, check for corroded or loose terminals.

NO:Check ground connection on terminal 85 black wire.

SE26B - Transmission Oil Pressure Sensors (EHM II), Diagnostic Schematic and Circuit Test



AT17388

Transmission oil pressure sensor circuit test

LEGEND:

- 1 - 11 Test points
- A310 EHM II control unit
- B300 Transmission oil pressure sensor of forward high clutch (EHM or EHM II)
- B301 Transmission oil pressure sensor of forward low clutch (EHM or EHM II)
- B302 Transmission oil pressure sensor of reverse clutch (EHM or EHM II)
- X50 6-pin interconnection between wiring harnesses W12/1 and W12/2
- XA310 56-pin connector for EHM II control unit A310

Meet following requirements:

- Main switch in IGN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Transmission Oil Pressure Sensors, Circuit Test

(1) Check voltage at F12 fuse output

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: [GO TO 2](#)

(2) Check voltage at F12 fuse input

Action:

Result must be same as battery voltage.

Result:

YES:Check fuse F12 and replace if necessary. If fuse is good, check for corroded or loose terminals. [GO TO 3](#)

NO:Perform " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) ".

(3) Check voltage at white/red wire terminal 1 of 2-pin connector XB300

Action:

Location: [XB300 - 2-Pin Connector for Transmission Oil Pressure Sensor B300 of Forward High Clutch \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 4](#)

NO:Check for corroded connections or broken white/red wire between connector XB300 and fuse F12.

(4) Check voltage at white/red wire terminal 1 of 2-pin connector XB301

Action:

Location: [XB301 - 2-Pin Connector for Transmission Oil Pressure Sensor B301 of Forward Low Clutch \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 5](#)

NO: Check for corroded connections or broken white/red wire between connector XB301 and fuse F12.

(5) Check voltage at white/red wire terminal 1 of 2-pin connector XB302

Action:

Location: [XB302 - 2-Pin Connector for Transmission Oil Pressure Sensor B302 of Reverse Clutch \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 6](#)

NO: Check for corroded connections or broken white/red wire between connector XB302 and fuse F12.

(6) Check continuity between pink/white wire terminal 2 of 2-pin connector XB300 and terminal 22 of 56-pin connector XA310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Continuity must be present.

Result:

YES: [GO TO 7](#)

NO: Check for corroded connections or broken pink/white wire between connector XB300 and 56-pin connector XA310.

(7) Check continuity between grey/white wire terminal 2 of 2-pin connector XB301 and terminal 50 of 56-pin connector XA310

Action:

Continuity must be present.

Result:

YES: [GO TO 8](#)

NO: Check for corroded connections or broken grey/white wire between connector XB301 and 56-pin connector XA310.

(8) Check continuity between brown/white wire terminal 2 of 2-pin connector XB302 and terminal 23 of 56-pin connector XA310

Action:

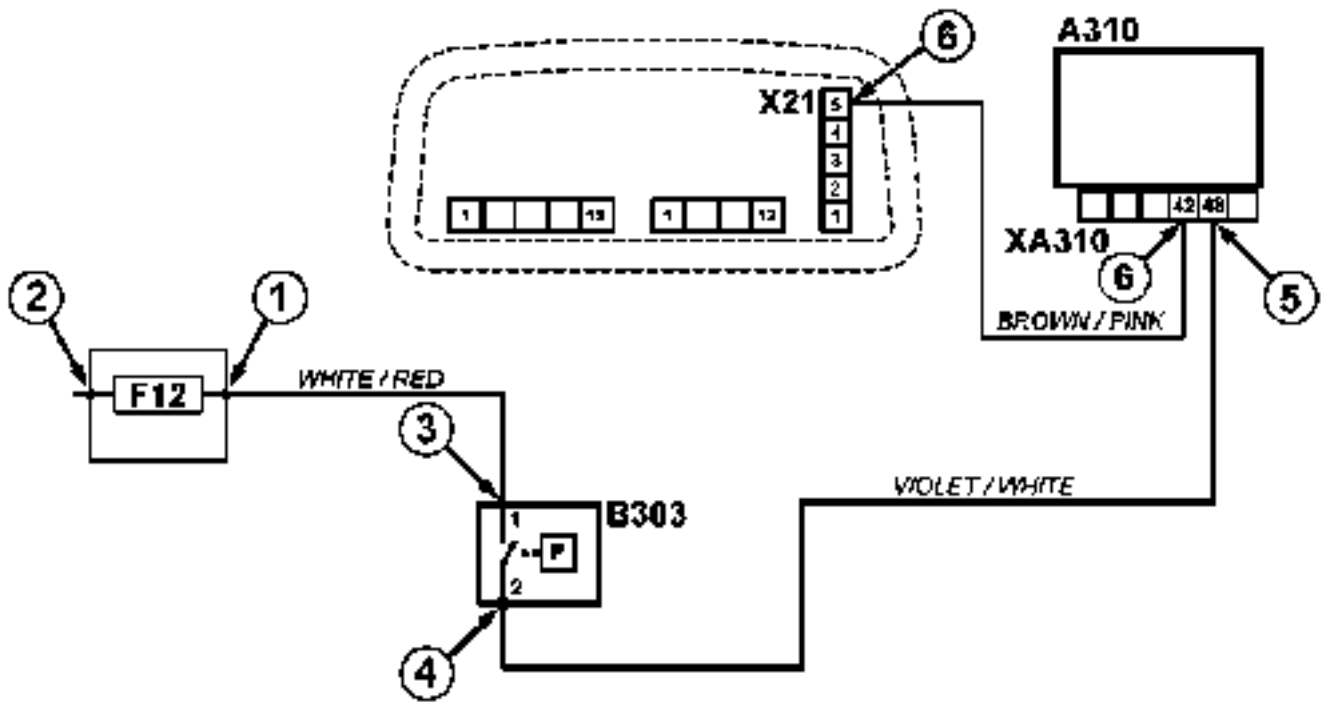
Continuity must be present.

Result:

YES: END OF TEST

NO: Check for corroded connections or broken brown/white wire between connector XB302 and 56-pin connector XA310.

SE26B - EHM II System Pressure Sensor, Diagnostic Schematic and Circuit Test



AT17391

EHM II system pressure sensor circuit test

LEGEND:

- 1 - 7 Test points
- A310 EHM II control unit
- B303 EHM II system pressure sensor
- F12 15 amp fuse
- X21 5 pin connector for instrument panel
- XA310 56-pin connector for EHM II control unit A310
- XB303 2-pin connector for B303

Meet following requirements:

- Main switch in IGN position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Transmission Oil Pressure Sensors, Circuit Test

(1) Check voltage at F12 fuse output

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be same as battery voltage.

Result:

YES:GO TO 3

NO:GO TO 2

(2) Check voltage at F12 fuse input

Action:

Result must be same as battery voltage.

Result:

YES:Check fuse F12 and replace if necessary. If fuse is good, check for corroded or loose terminals.GO TO 3

NO:Perform " [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) ".

(3) Check voltage at white/red wire terminal 1 of 2-pin connector XB303

Action:

Location: [XB303 - 2-Pin Connector for EHM II System Pressure Sensor B303](#)

Result must be same as battery voltage.

Result:

YES:GO TO 4

NO:Check for corroded connections or broken white/red wire between connector XB303 and fuse F12.

(4) Check voltage at violet/white wire terminal 2 of 2-pin connector XB303

Action:

Location: [XB303 - 2-Pin Connector for EHM II System Pressure Sensor B303](#)

Result must be same as battery voltage.

Result:

YES:GO TO 5

NO:Check the switch B303 for proper functioning and replace as necessary.

(5) Check continuity between violet/white wire terminal 2 of 2-pin connector XB303 and terminal 48 of 56-pin connector XA310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Continuity must be present.

Result:

YES:GO TO 6.

NO:Check for corroded connections or broken violet/white wire connector XB303 and 56-pin connector XA310.

(6) Check voltage at pin 42 of 56-pin connector XA310

Action:

Result must be same as battery voltage.

Result:

YES:GO TO 7.

NO:Check the EHM II Control Unit A310, repair or replace as necessary.

(7) Check continuity between brown/pink wire terminal 5 of 5-Pin Connector X21 for Instrument Panel and terminal 42 of 56-pin connector XA310

Action:

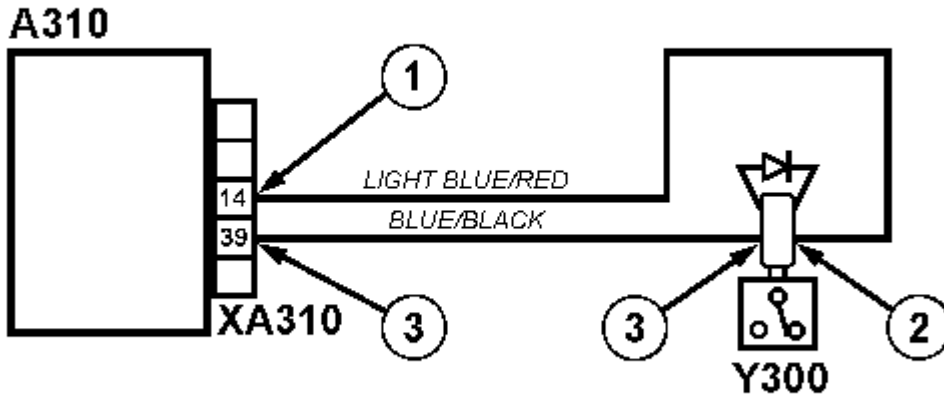
Continuity must be present.

Result:

YES:END OF TEST

NO:Check for corroded connections between brown/pink wire terminal 5 of 5-pin Connector X21 for Instrument Panel and terminal 42 of 56-pin connector XA310. If wire is good, replace the dashboard indicator.

SE26B - Shut-Off Solenoid Valve (EHM II), Diagnostic Schematic and Circuit Test



AT17389

Shut-off solenoid valve circuit test

LEGEND:

- 1 - 3 Test points
- A310 EHM II control unit
- XA310 56-pin connector for EHM II control unit A310
- Y300 Shut-off solenoid valve (EHM or EHM II)

Meet following requirements:

- Main switch in IGN position.
- Gear shift lever in neutral position.
- PTO disengaged.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Shut-Off Solenoid Valve Circuit Test

(1) Check voltage at light blue/red wire terminal 14 of 56-pin connector XA310

Action:

Location: [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 2](#)

NO: Perform " [SE26B - System Supply Voltage \(EHM II\), Diagnostic Schematic and Circuit Test](#) ".

(2) Check voltage at light blue/red wire terminal 2 of 2-pin connector XY300

Action:

Location: [XY300 - 2-Pin Connector for Shut-Off Solenoid Valve Y300 \(EHM or EHM II\)](#)

Result must be same as battery voltage.

Result:

YES: [GO TO 3](#)

NO: Check for corroded connections or broken light blue/red wire between connectors XA310 and XY300.

(3) Check continuity between blue/black wire terminal 39 of 56-pin connector XA310 and terminal 1 of 2-pin connector XY300

Action:

Main switch in OFF position.

Continuity must be present.

Result:

YES: Check " [Y300 - Shut-Off Solenoid Valve \(EHM or EHM II\)](#) " and replace if necessary. END OF TEST

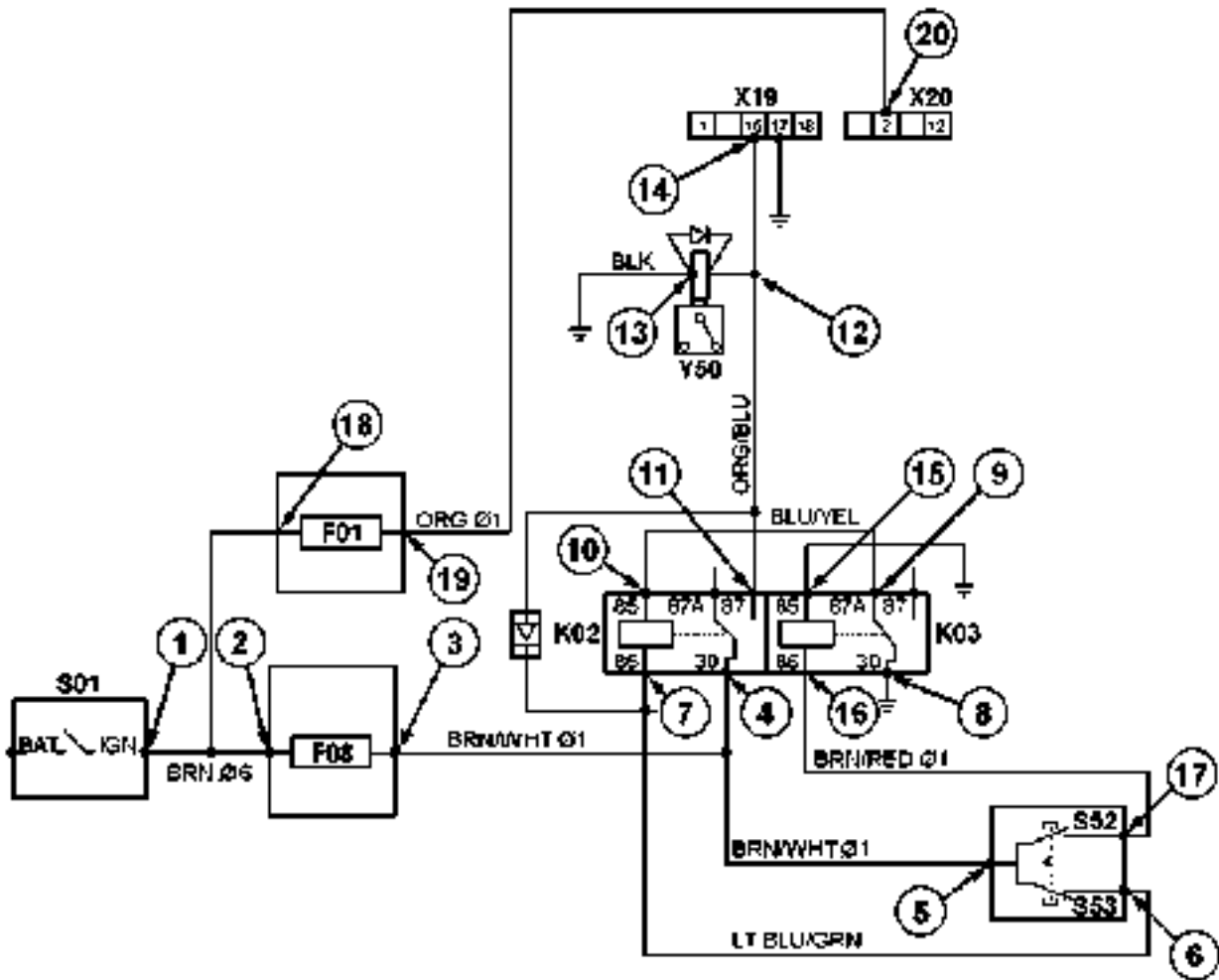
NO: Check for corroded connections or broken blue/black wire between connectors XA310 and XY300.

Group S27 - SE27 - Electro-Hydraulic Hi-Lo

SE27 - Electro-Hydraulic Hi-Lo (Summary of References)

[SE27 - Electro-Hydraulic Hi-Lo, Diagnostic Schematic and Circuit Test](#)

SE27 - Electro-Hydraulic Hi-Lo, Diagnostic Schematic and Circuit Test



AT16906

Hi-Lo circuit

LEGEND:

- 1 - 20 Test points
- F01 10 amp fuse
- F08 7.5 amp fuse
- K02 Hi-Lo relay (ON)
- K03 Hi-Lo relay (OFF)
- S01 Main switch
- S52 Hi-Lo solenoid valve switch (low)
- S53 Hi-Lo solenoid valve switch (high)
- X19 18-pin connector (instrument panel)
- X20 12-pin connector (instrument panel)
- Y50 Hi-Lo solenoid valve

Meet following requirements:

- Main switch in RUN (1) position.
- Gear shift lever in neutral position.
- PTO disengaged.
- Hi-Lo switch in "Hi" position.
- Multimeter [JT05791A](#) positive lead on numbered test points.
- Multimeter [JT05791A](#) negative lead on numbered test points.
- Multimeter [JT05791A](#) in continuity or on DC volts.

Electrical System Test - Hi-Lo Circuit

(1) Check voltage at "IGN" terminal of main switch

Action:

Location: [XS01 - 6/1-Pin Connectors for Main Switch S01](#)

Result must be the same as battery voltage.

Result:

YES: [GO TO 2.](#)

NO: Check [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) .

(2) Check voltage at fuse F08 input of fuse box

Action:

Location: XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be the same as battery voltage.

Result:

YES: [GO TO 3.](#)

NO: Check for corroded connections or broken brown wire between main switch and fuse box.

(3) Check voltage at fuse F08 output of fuse box

Action:

Result must be the same as battery voltage.

Result:

YES: [GO TO 4.](#)

NO: Check for failed fuse F08. If fuse is good, check for corroded or loose terminals.

(4) Check voltage at brown/white wire terminal 30 of relay K02

Action:

Location: [XK02 - 5-Pin Connector for Hi-Lo Relay \(ON\)](#)

Result must be the same as battery voltage.

Result:

YES: [GO TO 5.](#)

NO: Check for corroded connections or broken brown/white wire between fuse box and relay K02.

(5) Check voltage at brown/white wire terminal 2 of Hi-Lo switches input (S52 / S53)

Action:

Location: [X23 - 3-Pin Connector for Hi-Lo Switches \(S53 and S52\)](#)

Result must be the same as battery voltage.

Result:

YES: [GO TO 6.](#)

NO: Check for corroded connections or broken brown/white wire between fuse box and terminal of Hi-Lo switches input (S52 / S53).

(6) Check voltage at light blue/green wire terminal 3 of Hi-Lo switch S53 ("Hi" position)

Action:

Location: [X23 - 3-Pin Connector for Hi-Lo Switches \(S53 and S52\)](#)

Result must be the same as battery voltage.

Result:

YES: [GO TO 7.](#)

NO: Check for corroded or loose terminals. If connections or wires are good, see " [S53 - Hi-Lo Solenoid Valve Switch \(high\)](#) " and replace if necessary.

(7) Check voltage at light blue/green wire terminal 86 of relay K02

Action:

Location: [XK02 - 5-Pin Connector for Hi-Lo Relay \(ON\)](#)

Result must be the same as battery voltage.

Result:

YES: [GO TO 8.](#)

NO: Check for corroded connections or broken light blue/green wire between Hi-Lo switch S53 ("Hi" position) and relay K02.

(8) Check ground connection at black wire terminal 30 of relay K03

Action:

Location: [XK03 - 5-Pin Connector for Hi-Lo Relay \(OFF\)](#)

Check ground connection.

Result:

YES: [GO TO 9.](#)

NO: Check continuity to ground of black wire.

(9) Check ground connection at blue/yellow wire terminal 87A of relay K03

Action:

Location: [XK03 - 5-Pin Connector for Hi-Lo Relay \(OFF\)](#)

Check ground connection.

Result:

YES: [GO TO 10.](#)

NO: Check for failed " [K03 - Hi-Lo Relay \(OFF\)](#) ". Replace relay if it is failed. If relay is good, check for corroded or loose terminals.

(10) Check ground connection at blue/yellow wire terminal 85 of relay K02

Action:

Location: [XK02 - 5-Pin Connector for Hi-Lo Relay \(ON\)](#)

Check ground connection.

Result:

YES: [GO TO 11.](#)

NO: Check for corroded connections or broken blue/yellow wire between relay K02 and relay K03.

(11) Check voltage at orange/blue wire terminal 87 of relay K02

Action:

Location: [XK02 - 5-Pin Connector for Hi-Lo Relay \(ON\)](#)

Result must be the same as battery voltage.

Result:

YES: [GO TO 12](#)

NO: Check for failed " [K02 - Hi-Lo Relay \(ON\)](#) ". Replace relay if it is failed. If relay is good, check for corroded or loose terminals.

(12) Check voltage at orange/blue wire terminal of Hi-Lo solenoid valve Y50

Action:

Location: [XY50 - 4-pin Connector for Electro-Hydraulic Hi-Lo Solenoid Valve Y50](#)

Result must be the same as battery voltage.

Result:

YES: [GO TO 13.](#)

NO: Check for corroded connections or broken orange/blue wire between relay K02 and Hi-Lo solenoid valve Y50.

(13) Check ground connection at black wire terminal of Hi-Lo solenoid valve Y50

Action:

Check ground connection.

Result:

YES: [GO TO 14.](#)

NO: Check continuity to ground of black wire to tractor frame. If connections or wires are good, see "[Y50 - Electro-Hydraulic Hi-Lo Solenoid Valve \(24/24-Speed Transmission only\)](#)" and replace if necessary.

(14) Check voltage at orange/blue wire terminal 15 of 18-pin connector X19 for instrument panel

Action:

Location: [X19 - 18-Pin Connector for Instrument Panel](#)

Result must be the same as battery voltage.

Result:

YES: [GO TO 15.](#)

NO: Check for corroded connections or broken orange/blue wire between instrument panel and relay K02.

(15) Check ground connection at black wire terminal 85 of relay K03

Action:

Location: [XK03 - 5-Pin Connector for Hi-Lo Relay \(OFF\)](#)

Check ground connection.

Result:

YES: [GO TO 16.](#)

NO: Check continuity to ground of black wire.

(16) Check ground connection at red/brown wire terminal 86 of relay K03

Action:

Location: [XK03 - 5-Pin Connector for Hi-Lo Relay \(OFF\)](#)

Check ground connection.

Result:

YES: [GO TO 17.](#)

NO: Check for failed " [K03 - Hi-Lo Relay \(OFF\)](#) ". Replace relay if it is failed. If relay is good, check for corroded or loose terminals.

(17) Check ground connection at red/brown wire terminal 1 of Hi-Lo switch S52 ("Lo" position)

Action:

Location: [X23 - 3-Pin Connector for Hi-Lo Switches \(S53 and S52\)](#)

Check ground connection.

Result:

YES: [GO TO 18.](#)

NO: Check for corroded connections or broken red/brown wire between Hi-Lo switch S52 ("Lo" position) and relay K03.

(18) Check voltage at fuse F01 input of fuse box

Action:

Location:XF01 to XF15 - Connectors for Fuse and Relay Box II

Result must be the same as battery voltage.

Result:

YES: [GO TO 19.](#)

NO:Check for corroded connections or broken brown wire between main switch and fuse box.

(19) Check voltage at fuse F01 output of fuse box

Action:

Result must be the same as battery voltage.

Result:

YES: [GO TO 20.](#)

NO:Check for failed fuse F01. Replace fuse if it is failed. If fuse is good, check for corroded or loose terminals.

(20) Check voltage at orange wire terminal 2 of 12-pin connector X20 for instrument panel

Action:

Result must be the same as battery voltage.

Result:

YES:END OF TEST.

NO:Check for corroded connections or broken orange wire between fuse box and instrument panel connector.

Group 105 - Component Information - Connectors

Component Location - Connectors (Summary of References)

- [X01 - 21-Pin Connector for Fuse Box \(White\)](#)
- [X02 - 21-Pin Connector for Fuse Box \(Black\)](#)
- [X03 - 11-Pin Connector for Fuse Box](#)
- [X04 - 5-Pin Connector for Fuse Box](#)
- [X05 - 1-Pin Connector for Fuse Box \(+15\)](#)
- [X06 - 1-Pin Connector for Fuse Box \(+30\)](#)
- [X07 - 14-Pin Interconnection between Wiring Harnesses W01 and W02](#)
- [X08 - 4-pin Interconnection between Trailer Brake Wiring Harness and W02](#)
- [X09 - 3-Pin Interconnection between Wiring Harnesses W01 and W09](#)
- [X10 - 1-Pin Interconnection between Wiring Harnesses W01 and W10](#)
- [X11 - 1-Pin Interconnection between Wiring Harnesses W01 and W04](#)
- [X12 - 2-Pin Interconnection between Wiring Harnesses W04 and W05](#)
- [X13 - 2-Pin Interconnection between Wiring Harnesses W04 and W05 \(Air-Conditioning System\)](#)
- [X16 - 9-Pin Com-Port for Diagnostic Connector \(EHM or EHM II\) to PC](#)
- [X17 - 3-Pin Connector for 3-Pin Power Outlet](#)
- [X18 - 7-Pin Connector for 7-Pin Trailer Brake Socket](#)
- [X19 - 18-Pin Connector for Instrument Panel](#)
- [X20 - 12-Pin Connector for Instrument Panel](#)
- [X21 - 5-Pin Connector for Instrument Panel](#)
- [X22 - 3-Pin Connector for Diodes](#)
- [X23 - 3-Pin Connector for Hi-Lo Switches \(S53 and S52\)](#)
- [X24 - 4-Pin Connector for E03/2, E13, H32, H34/2 and H35 Lights l.h.](#)
- [X25 - 4-Pin Connector for E04/2, E14, H33, H44/2 and H45 Lights r.h.](#)
- [X27 - 2-Pin Interconnection between Wiring Harnesses W02 and W08](#)
- [X28 - 2-Pin interconnection between wiring harnesses W08/1 and W08/2](#)
- [X29/L - 2-Pin Interconnection between Wiring Harnesses W05 and W06/1L](#)
- [X29/R - 2-Pin Interconnection between Wiring Harnesses W05 and W06/1R](#)
- [X31/L - 2-Pin Interconnection between Wiring Harnesses W05 and W06/3L \(Outer\)](#)
- [X31/R - 2-Pin Interconnection between Wiring Harnesses W05 and W06/3R \(Outer\)](#)
- [X32 - 3-Pin Connector for E03/1 and H34/1 Lights l.h. \(Tractors with Cab\)](#)
- [X33 - 3-Pin Connector for E04/1 and H44/1 Lights r.h. \(Tractors with Cab\)](#)
- [X41 - 4-Pin Interconnection between Wiring Harnesses W11/1 and W11/2 \(EHS\)](#)
- [X41 II - 4-Pin Interconnection between Wiring Harnesses W11 II/1 and W11 II/2 \(EHS II\)](#)
- [X42 - 3-Pin Connector for Diagnostic \(EHS\) to PC](#)
- [X42 II - 3-Pin Connector for Diagnostic \(EHS II\) to PC](#)
- [X43 - 2/1-Pin Interconnections between Relay K18 and Alternator G02 \(+15\)](#)
- [X43 II - 2/1-Pin Interconnections between Relay K18 II and Alternator G02 \(+15\)](#)
- [X44 II - 3-Pin Interconnection between EHS II Control Panel A210 and Adapter Wiring Harness W11/3 \(EHS II\)](#)

- [X45 II - 3-Pin Interconnection between EHS II Control Panel A210 and Adapter Wiring Harness W11/4 \(EHS II\)](#)
- [X50 - 6-Pin Interconnection between Wiring Harnesses W12/1 and W12/2](#)
- [X51 - 2/2-Pin Interconnections to Ground between Wiring Harnesses W03 and W12](#)
- [X52 - 2/2-Pin Interconnections between Warning Light H50 \(EHM\) and Wiring Harness W12](#)
- [X53 - 2/1-Pin Interconnections between Clutch Pedal Switch S72 \(EHM\) and Wiring Harness W12](#)
- [X54 - 2/1-Pin Interconnections between Alternator G02 and Wiring Harness W12](#)
- [X55 - 1-Pin Interconnection between Wiring Harnesses W01 and W02](#)
- [X56 - 2/1-Pin Interconnections between Wiring Harnesses W05 and W14](#)
- [X57/L - 2-Pin Interconnection between Wiring Harnesses W05 and W15](#)
- [X57/R - 2-Pin Interconnection between Wiring Harnesses W05 and W15](#)
- [X81 - 1-Pin Interconnection between Wiring Harnesses W02 and W03 II](#)
- [X82 - 2-Pin Interconnection between Wiring Harnesses W02 and W03 II](#)

- [XA60 - 2/8-Pin Connectors for Radio A60](#)
- [XA200 - Connector for EHS Control Panel A200](#)
- [XA210 - 12-Pin Interconnection between EHS II Control Panel A210 and W11 II \(EHS II\)](#)
- [XA300/1 - 12-Pin Connector for EHM Control Unit A300](#)
- [XA300/2 - 12-Pin Connector for EHM Control Unit A300](#)
- [XA301 - 17-Pin Connector for Relay Box A301 \(EHM\)](#)
- [XA302 - 5-Pin Connector for Time-Delay Switch A302 \(EHM\)](#)
- [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

- [XB01 - 2-Pin Connector for Ambient Temperature Sensor B01 \(EHM or EHM II\)](#)
- [XB02 - 2/1-Pin Connectors for Air Filter Restriction Sensor B02](#)
- [XB03 - 3-Pin Connector for Fuel Level Sensor B03](#)
- [XB04 - 1-Pin Connector for Engine Oil Pressure Switch B04](#)
- [XB05 - 2/1-Pin Connectors for Parking Brake Switch B05](#)
- [XB06 - 3-Pin Connector for Transmission Speed Sensor B06](#)
- [XB07 - 2-Pin Connector for PTO Speed Selection Switch B07](#)
- [XB08 - 2/1-Pin Connectors for PTO Neutral Start Switch B08](#)
- [XB15 - 2-Pin Connector for Air-Conditioning Pressure Switch B15](#)
- [XB31 - 2/1-Pin Connectors for Trailer Brake Pressure Switch B31](#)
- [XB36 - 2/1-Pin Connectors for Neutral Start Switch B36](#)
- [XB56/1 - 1-Pin Connector for Coolant Temperature Sensor B56/1 \(3-Cyl. only\)](#)
- [XB56/2 - 2-Pin Connector for Coolant Temperature Sensor B56/2 \(4-Cyl. only\)](#)
- [XB60 - 2-Pin Connector for Transmission Oil Temperature Sensor B60 \(EHM or EHM II\)](#)
- [XB63 - 2-Pin Connector for High Range/Low Range Switch B63 on Transmission \(EHM or EHM II\)](#)
- [XB64 - 4-Pin Connector for Reverse Drive Lever Switch B64 \(EHM or EHM II\)](#)
- [XB65 - 6-Pin Connector for Clutch Pedal Potentiometer B65 \(EHM or EHM II\)](#)
- [XB69 - 2/1-Pin Connectors for Brake Oil Level Sensor B69](#)
- [XB72 - 2-Pin Connector for Engine Speed Sensor B72](#)
- [XB73 - 2-Pin Connector for Oil Filter Restriction Sensor B73 \(EHM or EHM II\)](#)
- [XB112 - 3/1-Pin Connectors for Brake Pedal Switches B112](#)

- [XB200 - 3-Pin Connector for Position Sensor B200 \(EHS\)](#)
- [XB200 II - 6-Pin Connector for Position Sensor B200 II \(EHS II\)](#)
- [XB201 - 3-Pin Connector for Draft Sensor B201 \(EHS\)](#)
- [XB201 II - 6-Pin Connector for Draft Sensor B201 II \(EHS II\)](#)
- [XB300 - 2-Pin Connector for Transmission Oil Pressure Sensor B300 of Forward High Clutch \(EHM or EHM II\)](#)
- [XB301 - 2-Pin Connector for Transmission Oil Pressure Sensor B301 of Forward Low Clutch \(EHM or EHM II\)](#)
- [XB302 - 2-Pin Connector for Transmission Oil Pressure Sensor B302 of Reverse Clutch \(EHM or EHM II\)](#)
- [XB303 - 2-Pin Connector for EHM II System Pressure Sensor B303](#)

- [XE01 - 3/1-Pin Connectors for r.h. H4 Headlight E01](#)
- [XE02 - 3/1-Pin Connectors for l.h. H4 Headlight E02](#)
- [XE07 - 3-Pin Connector for l.h. H4 Farm Headlight E07](#)
- [XE08 - 3-Pin Connector for r.h. H4 Farm Headlight E08](#)
- [XE11/L - 2-Pin Connector for l.h. Rear Work Light E11/L](#)
- [XE11/R - 2-Pin Connector for r.h. Rear Work Light E11/R](#)
- [XE12 - 2/1-Pin Connectors for Dome Light E12](#)
- [XE18/1L - 2-Pin Connector for l.h. Front Work Light E18/1L \(Inner\)](#)
- [XE18/1R - 2-Pin Connector for r.h. Front Work Light E18/1R \(Inner\)](#)
- [XE18/2L - 2-Pin Connector for l.h. Front Work Light E18/2L \(Outer\)](#)
- [XE18/2R - 2-Pin Connector for r.h. Front Work Light E18/2R \(Outer\)](#)
- [XE21 - 2-Pin Connector for License Plate Light E21](#)
- [XE27 - 2/1-Pin Connectors for Beacon Light E27](#)

- [XF00 - 2-Pin Connector for Main Fuse F00](#)
- [XF01 to XF15 - Connectors for Fuse and Relay Box II](#)
- [XF16 - 2-Pin Connector for Main Fuse F16](#)
- [XF17 to XF22 - Connectors for Cab Fuses \(F17 to F22\)](#)
- [XF23 - 2-Pin Connector for Fuse F23 of Shut-Off System Circuit \(EHM\)](#)
- [XF25 - 1-Pin Connector for Main Fuse F25 of Fuse and Relay Box II \(+15\)](#)
- [XF26 - 1-Pin Connector for Main Fuse F26 of Fuse and Relay Box II \(+30\)](#)

- [XFT01 - 1-Pin Connector for Fuse Box \(3-Pin Power Outlet\)](#)

- [XG02 - 3/1-Pin Connectors for Alternator G02](#)

- [XH01 - 2/1-Pin Connectors for Horn H01](#)
- [XH50 - 2-Pin Connector for Warning Light H50 \(EHM or EHM II\)](#)

- [XK01 - 4-Pin Connector for Starter Relay K01](#)
- [XK02 - 5-Pin Connector for Hi-Lo Relay \(ON\)](#)
- [XK03 - 5-Pin Connector for Hi-Lo Relay \(OFF\)](#)
- [XK04 - 5-Pin Connector for Differential Lock Relay \(ON\)](#)
- [XK05 - 5-Pin Connector for Front-Wheel Drive Relay](#)
- [XK06 - 5-Pin Connector for Differential Lock Relay \(OFF\)](#)
- [XK07 - 5-Pin Connector for PTO Neutral Start Relay](#)

- [XK08 - 6-Pin Connector for Turn/Warn Signal Relay K08](#)
- [XK09 - 5-Pin Connector for Trailer Brake Relay K09](#)
- [XK10 - 4-Pin Connector for Intake Air Heater Relay K10](#)
- [XK11 - 5-Pin Connector for Relay of Fan Motor \(Tractors with Cab\)](#)
- [XK12 - 5-Pin Connector for Rear Work Light Relay \(Tractors with Cab\)](#)
- [XK13 - 5-Pin Connector for Front Work Light Relay \(Tractors with Cab\)](#)
- [XK14 - 5-Pin Connector for Front-Wheel Drive Relay K14 \(EHM or EHM II\)](#)
- [XK15 - 5-Pin Connector for Declutch Relay K15 \(EHM or EHM II\)](#)
- [XK16 - 5-Pin Connector for Neutral Start Relay K16 \(EHM or EHM II\)](#)
- [XK17 - 4-Pin Connector for Relay K17 of Shut-Off System \(EHM\)](#)
- [XK18 - 4/1-Pin Connectors for Relay K18 \(EHS\)](#)
- [XK18 II - 4/1-Pin Connectors for Relay K18 II \(EHS II\)](#)

- [XM01 - Connector for Starter Motor M01](#)
- [XM02 - 1-Pin Connector for Air-Conditioning Compressor Clutch M02](#)
- [XM03 - 4-Pin Connector for Front Wiper Motor M03](#)
- [XM04 - 2-Pin Connector for Rear Wiper Motor with Switch M04](#)
- [XM05 - 2-Pin Connector for Pump of Washer System M05](#)
- [XM06 - 2-Pin Connector for Air Suspension Seat Compressor Motor M06](#)
- [XM07 - 3-Pin Connectors for Fan Motor M07](#)

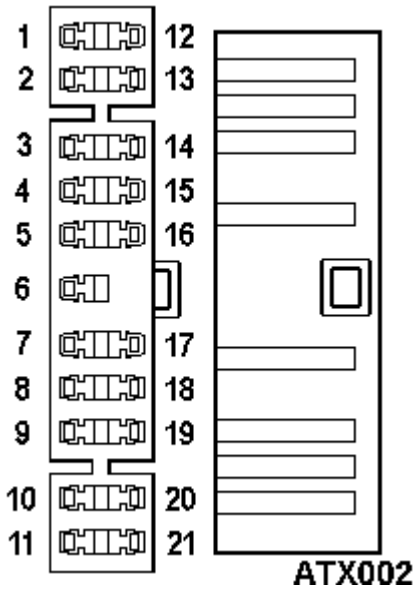
- [XR01 - 1-Pin Connector for Intake Air Heater R01 \(3-Cyl.\)](#)
- [XR15 - 1-Pin Connector for Intake Air Heater R15 \(4-Cyl.\)](#)

- [XS01 - 6/1-Pin Connectors for Main Switch S01](#)
- [XS08 - 3/1-Pin Connectors for Turn Signal Light Switch S08](#)
- [XS09 - 6/1-Pin Connectors for Light and Horn Switch S09](#)
- [XS11 - 10-Pin Connector for H4 Farm Headlight Switch S11](#)
- [XS14 - 5/1-Pin Connectors for Fan Switch S14](#)
- [XS15 - 10-Pin Connector for Switch S15 of Windshield Wiper and Pump of Washer System](#)
- [XS20 - 2-Pin Connector for Calibration Switch S20 of Digital Instrument](#)
- [XS21 - 2-Pin Connector for PTO Mode Switch S21](#)
- [XS22 - 10-Pin Connector for Differential Lock Switch S22](#)
- [XS23 - 10-Pin Connector for Reversal Switch for Allocation S23 \(Flow Divider Valve\)](#)
- [XS36 - 10-Pin Connector for Beacon Light Switch S36](#)
- [XS50 - 2-Pin Connector for Calibration Switch S50 \(EHM or EHM II\)](#)
- [XS51 - 2-Pin Connector for Calibration Switch S51 of Digital Instrument \(EHM or EHM II\)](#)
- [XS54 - 1-Pin Connector for Declutch Switch S54 on Range Shift Lever \(EHM or EHM II\)](#)
- [XS61 - 2-Pin Connector for Rear Work Light with Switch S61](#)
- [XS63 - 10-Pin Connector for Front-Wheel Drive Switch S63](#)
- [XS68 - 6-Pin Connector for Hitch Remote Control Switch S68 \(EHS\)](#)
- [XS68 II - 6-Pin Connector for Hitch Remote Control Switch S68 II \(EHS II\)](#)
- [XS72 - 4/1-Pin Connectors for Clutch Pedal Switch S72 \(EHM or EHM II\)](#)
- [XS92/1 - 10-Pin Connector for Front Work Light Switch S92/1](#)
- [XS92/2 - 10-Pin Connector for Rear Work Light Switch S92/2](#)
- [XS93 - 2/1-Pin Connectors for Heating and Air-Conditioning Switch S93](#)

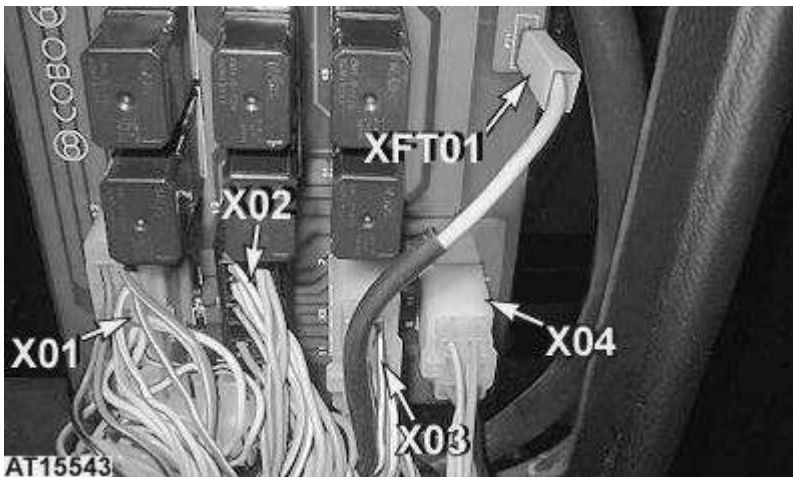
- [XS106 - 7-Pin Connector for Hazard Warning Light Switch S106](#)
- [XS200 - 2-Pin Connector for Raise Limiting Switch S200 \(EHS\)](#)
- [XS200 II - 2-Pin Connector for Raise Limiting Switch S200 II \(EHS II\)](#)
- [XS201 - 3-Pin Connector for Raise/Lower Switch S201 \(EHS\)](#)
- [XS201 II - 3-Pin Connector for Raise/Lower Switch S201 II \(EHS II\)](#)

- [XY03 - 4-Pin Connector for Front-Wheel Drive Solenoid Valve Y03](#)
- [XY05 - 4-Pin Connector for Differential Lock Solenoid Valve Y05](#)
- [XY13 - 2-Pin Connector for Fuel Shut-Off Solenoid Valve Y13](#)
- [XY23 - 4-Pin Connector for Flow Divider Solenoid Valve Y23](#)
- [XY31 - 4-Pin Connector for Trailer Brake Solenoid Valve Y31](#)
- [XY44 - 2-Pin Connector for Fuel Transfer Pump Y44](#)
- [XY50 - 4-pin Connector for Electro-Hydraulic Hi-Lo Solenoid Valve Y50 \(24/24-Speed Transmission\)](#)
- [XY51 - 2-Pin Connector for Reverse Clutch Solenoid Valve Y51 \(EHM or EHM II\)](#)
- [XY52 - 2-Pin Connector for Forward Low Clutch Solenoid Valve Y52 \(EHM or EHM II\)](#)
- [XY53 - 2-Pin Connector for Forward High Clutch Solenoid Valve Y53 \(EHM or EHM II\)](#)
- [XY200 - 4-Pin Connector for Raise Solenoid Valve Y200 \(EHS\)](#)
- [XY200 II - 4-Pin Connector for Raise Solenoid Valve Y200 II \(EHS II\)](#)
- [XY201 - 4-Pin Connector for Lower Solenoid Valve Y201 \(EHS\)](#)
- [XY201 II - 3-Pin Connector for Lower Solenoid Valve Y201 II \(EHS II\)](#)
- [XY300 - 2-Pin Connector for Shut-Off Solenoid Valve Y300 \(EHM or EHM II\)](#)

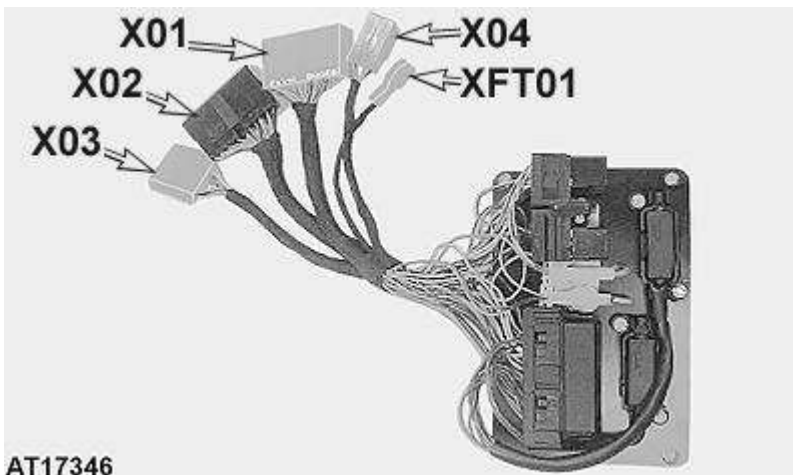
X01 - 21-Pin Connector for Fuse Box (White)



21-pin connector for fuse box (white)



Fuse box (Version I)



Fuse box (Version II)

LEGEND:

- X01 21-pin connector for fuse box (white)
- X02 21-pin connector for fuse box (black)
- X03 11-pin connector for fuse box
- X04 5-pin connector for fuse box
- XFT01 1-pin connector for fuse box (3-pin power outlet)

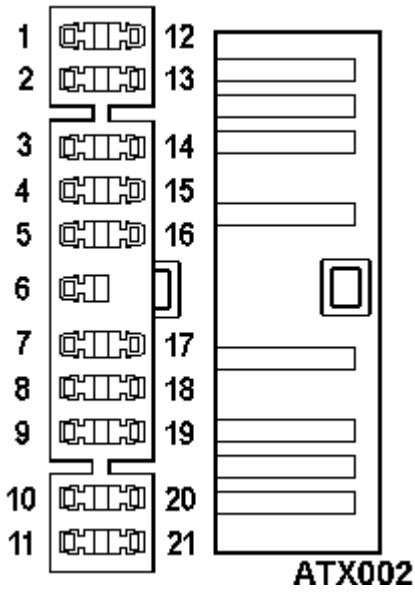
Component information

Component information	
Number of pins:	21
Connection Point:	Fuse and Relay Box (Version I or Version II)
Wiring harness:	W02 - Main Wiring Harness and W16 - Fuse and Relay Box II Wiring Harness

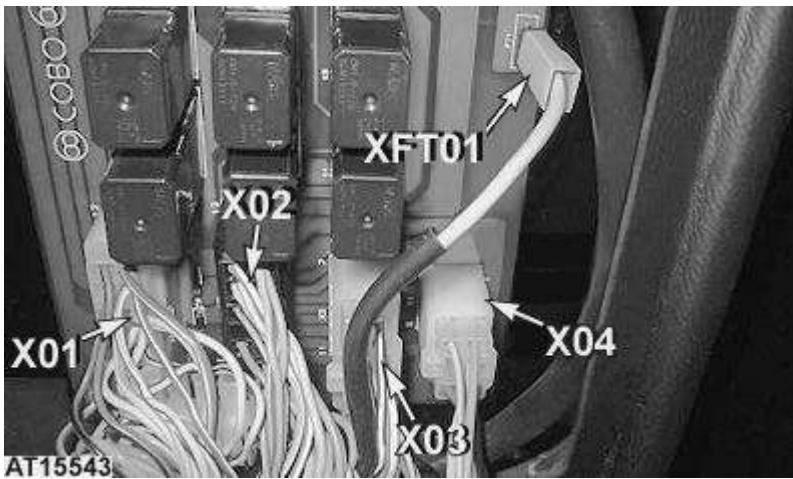
Plug layout

Plug layout of X01	
Pin no.	Wire color
1	brown/white
2	light blue/grey
3	yellow
4	yellow
5	yellow/black
6	yellow/black
7	red
8	not used
9	orange/yellow
10	orange
11	orange
12	brown/black
13	yellow/green
14	brown/green
15	not used
16	not used
17	violet/black
18	orange
19	brown
20	not used
21	not used

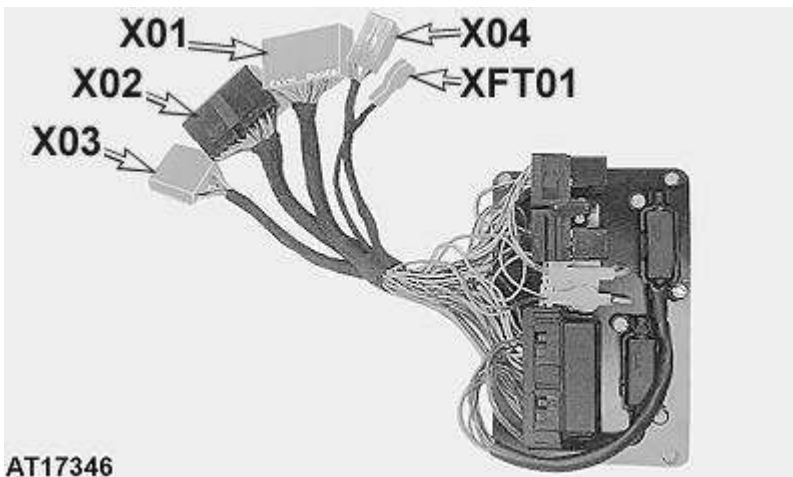
X02 - 21-Pin Connector for Fuse Box (Black)



21-pin connector for fuse box (black)



Fuse box (Version I)



Fuse box (Version II)

LEGEND:

- X01 21-pin connector for fuse box (white)
- X02 21-pin connector for fuse box (black)
- X03 11-pin connector for fuse box
- X04 5-pin connector for fuse box
- XFT01 1-pin connector for fuse box (3-pin power outlet)

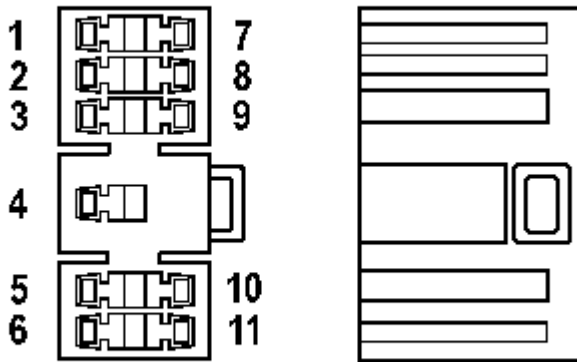
Component information

Component information	
Number of pins:	21
Connection Point:	Fuse and Relay Box (Version I or Version II)
Wiring harness:	W02 - Main Wiring Harness and W16 - Fuse and Relay Box II Wiring Harness

Plug layout

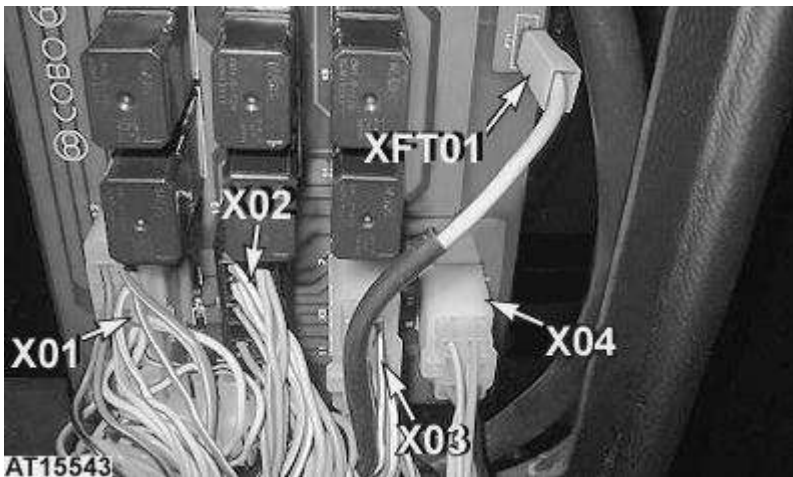
Plug layout of X02	
Pin no.	Wire color
1	violet
2	red/green
3	grey
4	green/black
5	grey/yellow
6	orange/green
7	pink/black
8	brown
9	grey/black
10	green
11	black
12	white/blue
13	white/grey
14	orange/black
15	not used
16	red/violet
17	red/brown
18	blue/black
19	orange/blue
20	violet/green
21	black

X03 - 11-Pin Connector for Fuse Box

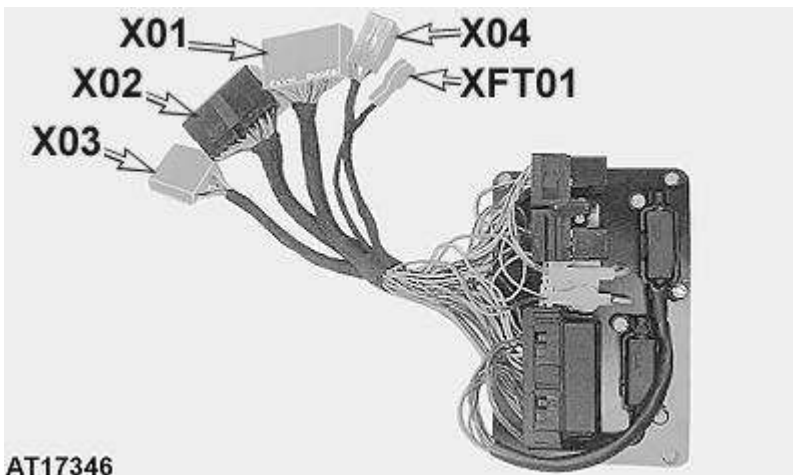


ATX003

11-pin connector for fuse box



Fuse box (Version I)



Fuse box (Version II)

LEGEND:

- X01 21-pin connector for fuse box (white)
- X02 21-pin connector for fuse box (black)
- X03 11-pin connector for fuse box
- X04 5-pin connector for fuse box
- XFT01 1-pin connector for fuse box (3-pin power outlet)

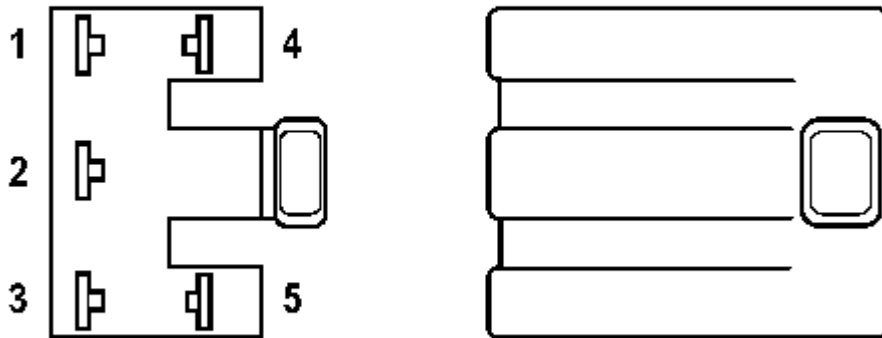
Component information

Component information	
Number of pins:	11
Connection Point:	Fuse and Relay Box (Version I or Version II)
Wiring harness:	W02 - Main Wiring Harness and W16 - Fuse and Relay Box II Wiring Harness

Plug layout

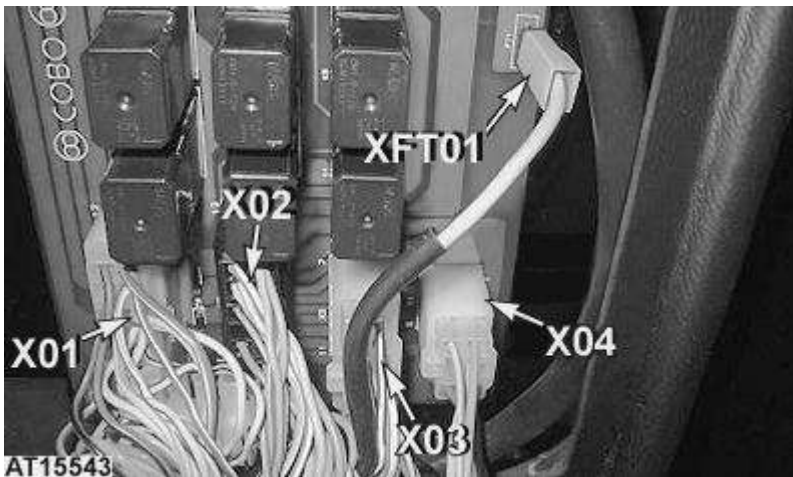
Plug layout of X03	
Pin no.	Wire color
1	white/blue
2	white/red
3	not used
4	pink/black
5	orange/blue
6	black
7	not used
8	violet/red
9	orange/green
10	blue/black
11	violet/green

X04 - 5-Pin Connector for Fuse Box (from W07)

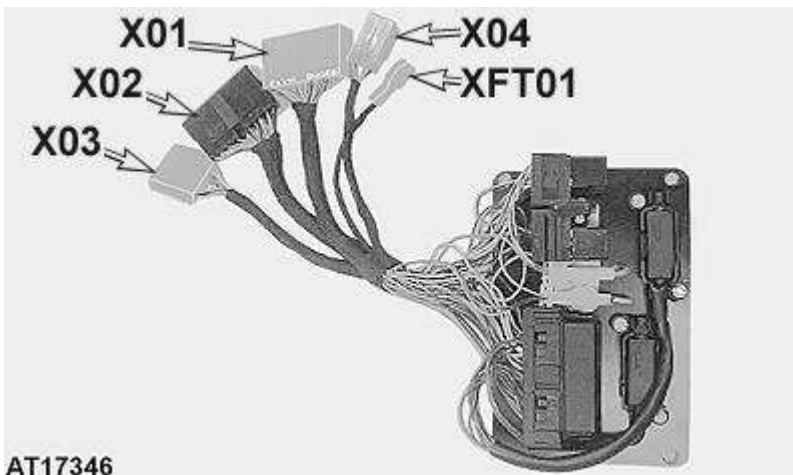


ATX004

5-pin connector for fuse box (from W07)



Fuse box (Version I)



Fuse box (Version II)

LEGEND:

- X01 21-pin connector for fuse box (white)
- X02 21-pin connector for fuse box (black)
- X03 11-pin connector for fuse box
- X04 5-pin connector for fuse box
- XFT01 1-pin connector for fuse box (3-pin power outlet)

Component information

Component information	
Number of pins:	5
Connection Point:	Fuse and Relay Box (Version I or Version II)
Wiring harness:	W04 - Engine/Cab Wiring Harness and W16 - Fuse and Relay Box II Wiring Harness

Plug layout

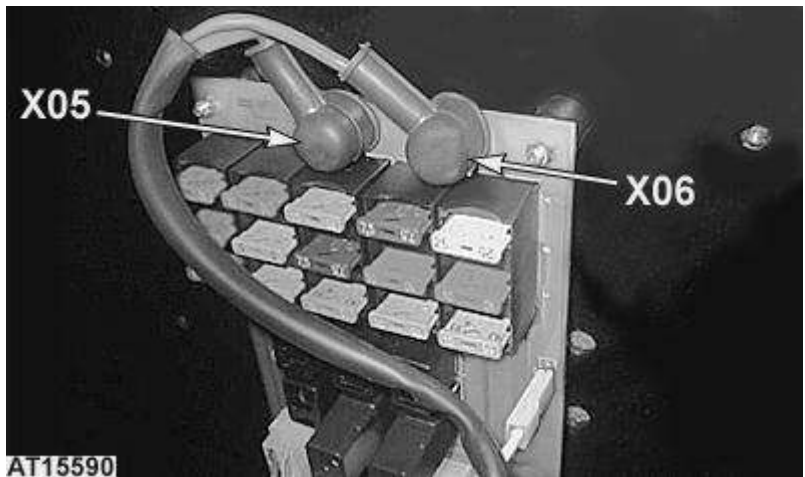
Plug layout of X04	
Pin no.	Wire color
1	green
2	grey
3	black
4	red/grey
5	red/green

X05 - 1-Pin Connector for Fuse Box (+15)

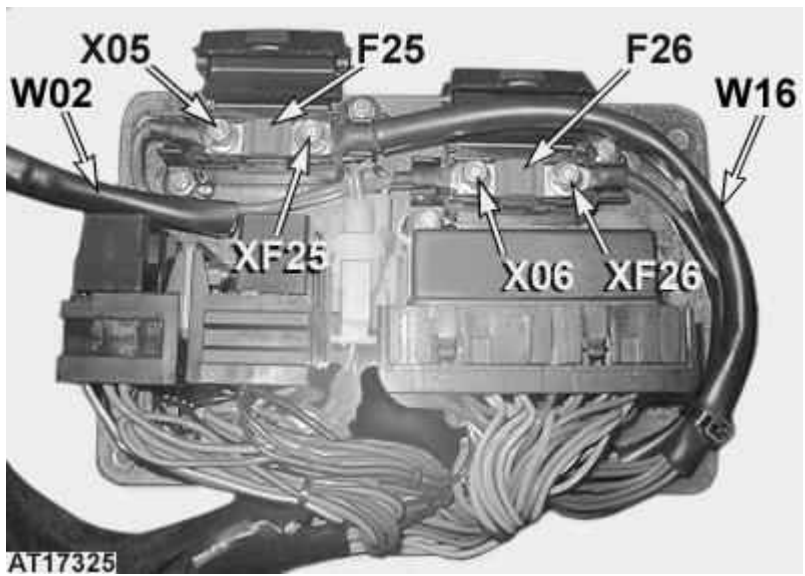


ATX005

1-pin connector for fuse box (+15)



Fuse box (Version I)



Fuse box (Version II)

LEGEND:

- F25 50 amp main fuses of fuse and relay box II (+15)
- F26 50 amp main fuses of fuse and relay box II (+30)
- X05 1-pin connector for fuse box (+15)
- X06 1-pin connector for fuse box (+30)
- XF25 1-pin connector for main fuse F25 of fuse and relay box II (+15)
- XF26 1-pin connector for main fuse F26 of fuse and relay box II (+30)
- W02 Main wiring harness
- W16 Fuse and relay box II wiring harness

Component information

Component information	
Number of pins:	1
Connection Point:	Fuse and Relay Box (Version I or II)
Wiring harness:	W02 - Main Wiring Harness and W16 - Fuse and Relay Box II Wiring Harness
Circuit:	SE01A - Power Supply, Diagnostic Schematic and Circuit Test

Plug layout

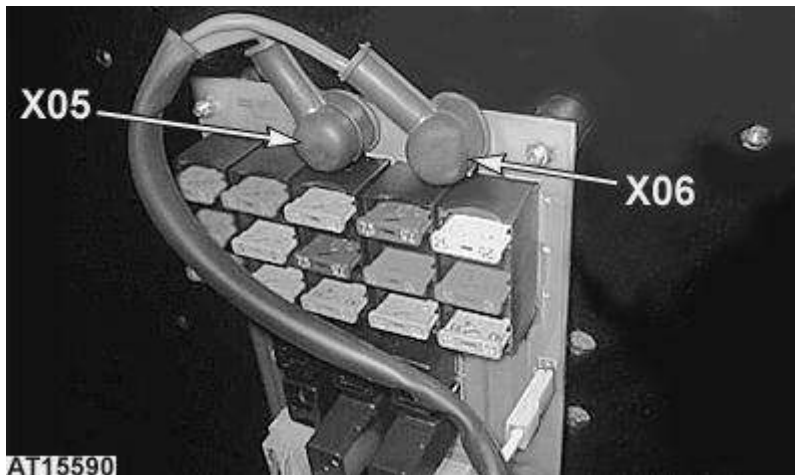
Plug layout	
Pin no.	Wire color
1	brown

X06 - 1-Pin Connector for Fuse Box (+30)

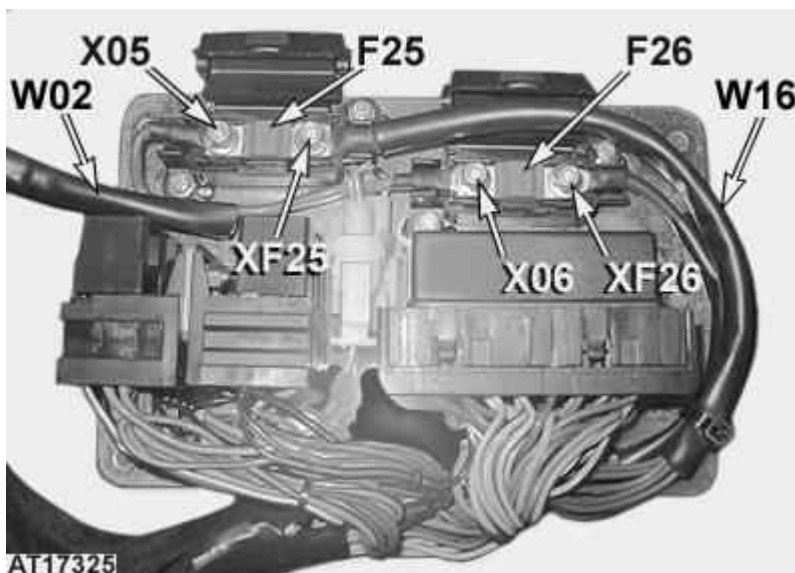


ATX005

1-pin connector for fuse box (+30)



1-pin connector for fuse box (+30)



Main fuses of fuse and relay box II

LEGEND:

- F25 50 amp main fuses of fuse and relay box II (+15)
- F26 50 amp main fuses of fuse and relay box II (+30)
- X05 1-pin connector for fuse box (+15)
- X06 1-pin connector for fuse box (+30)
- XF25 1-pin connector for main fuse F25 of fuse and relay box II (+15)
- XF26 1-pin connector for main fuse F26 of fuse and relay box II (+30)
- W02 Main wiring harness
- W16 Fuse and relay box II wiring harness

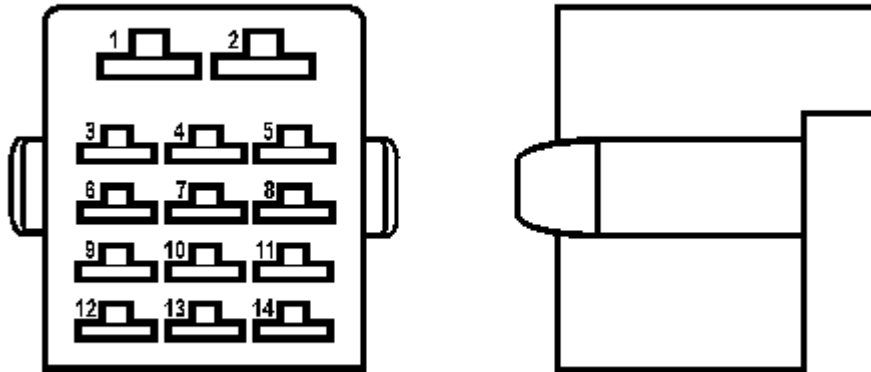
Component information

Component information	
Number of pins:	1
Connection Point:	Fuse and Relay Box (Version I or II)
Wiring harness:	W02 - Main Wiring Harness and W16 - Fuse and Relay Box II Wiring Harness
Circuit:	SE01A - Power Supply, Diagnostic Schematic and Circuit Test

Plug layout

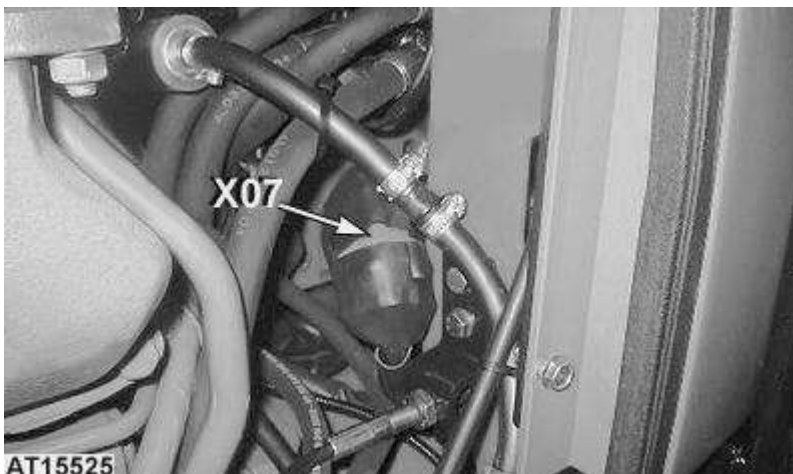
Plug layout	
Pin no.	Wire color
1	red

X07 - 14-Pin Interconnection between Wiring Harnesses W01 and W02



ATX007

14-pin interconnection between wiring harnesses W01 and W02



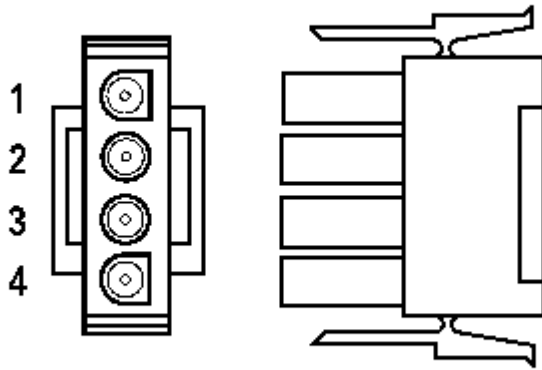
14-pin interconnection between wiring harnesses W01 and W02

LEGEND:

- 1 Black lead
- 2 Red lead
- 3 Brown/green lead
- 4 Orange lead
- 5 White lead
- 6 Violet lead
- 7 Red/yellow lead
- 8 White/green lead
- 9 Red/grey lead
- 10 Pink/green lead
- 11 White/blue lead
- 12 Red/blue lead
- 13 Green lead

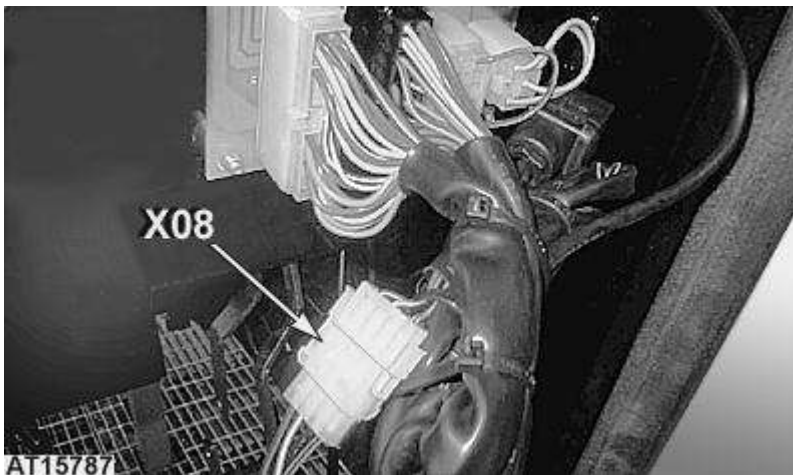
- 14 Grey lead
- X07 14-pin interconnection between wiring harnesses W01 and W02

X08 - 4-Pin Interconnection between Trailer Brake Wiring Harness and W02



ATX008

4-pin interconnection between trailer brake wiring harness and W02



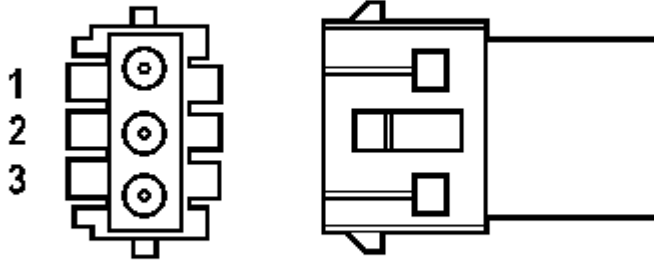
4-pin interconnection between trailer brake wiring harness and W02

LEGEND:

- 1 Orange/black lead
- 2 Black lead
- 3 Pink/blue lead
- 4 Black/brown lead
- X08 4-pin interconnection between trailer brake wiring harness and W02

X09 - 3-Pin Interconnection between Wiring

Harnesses W01 and W09



ATX009

3-pin interconnection between wiring harnesses W01 and W09

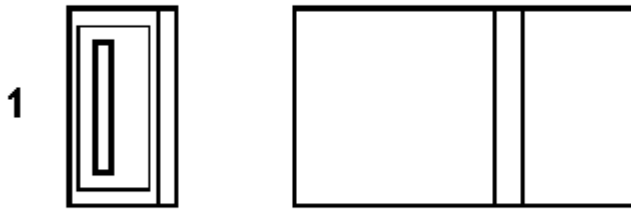


3-pin interconnection between wiring harnesses W01 and W09

LEGEND:

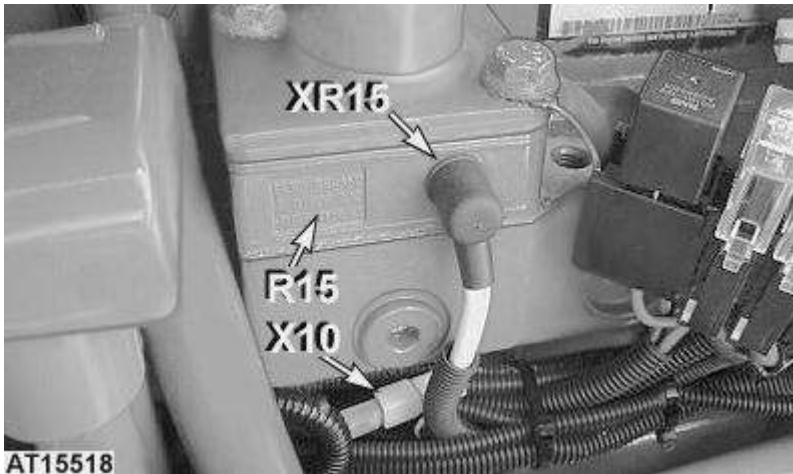
- 1 Black lead
- 2 Grey lead
- 3 Green lead
- X09 3-pin interconnection between wiring harnesses W01 and W09

X10 - 1-Pin Interconnection between Wiring Harnesses W01 and W10



ATX010

X10 - 1-pin interconnection between wiring harnesses W01 and W10



X10 - 1-pin interconnection between wiring harnesses W01 and W10

LEGEND:

- 1 White lead
- R15 Intake air heater (4-cyl.)
- X10 1-pin interconnection between wiring harnesses W01 and W10
- XR15 1-pin connector for intake air heater R15 (4-cyl.)

X11 - 1-Pin Interconnection between Wiring Harnesses W01 and W04



ATX011

1-pin interconnection between wiring harnesses W01 and W04



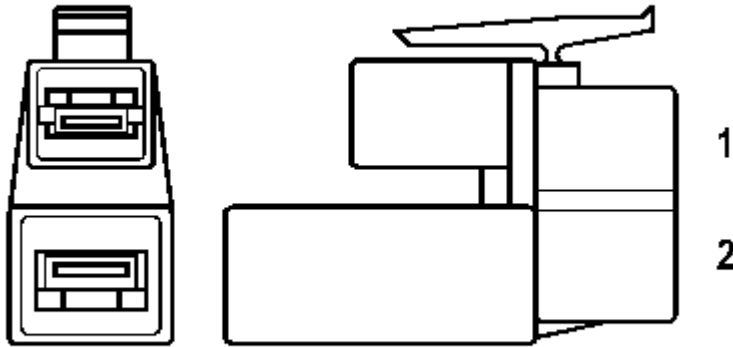
1-pin interconnection between wiring harnesses W01 and W04

LEGEND:

A Orange lead

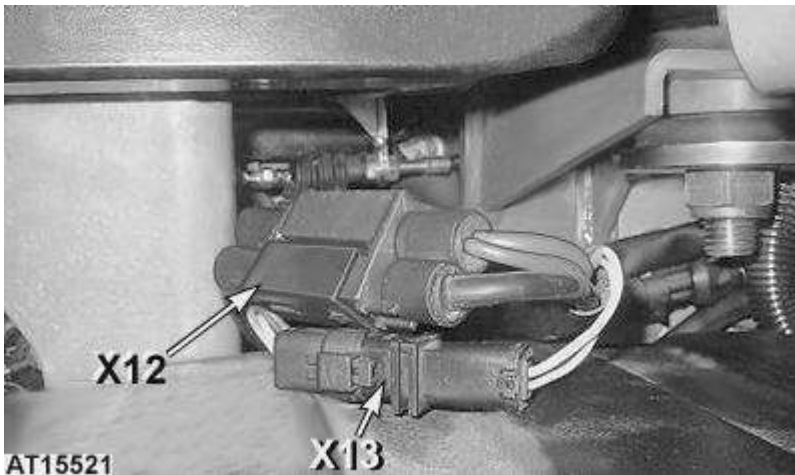
X11 1-pin interconnection between wiring harnesses W01 and W04

X12 - 2-Pin Interconnection between Wiring Harnesses W04 and W05



ATX012

X12 - 2-pin interconnection between wiring harnesses W04 and W05

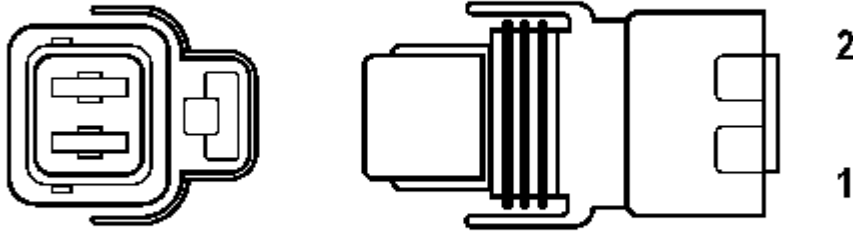


X12 - 2-pin interconnection between wiring harnesses W04 and W05

LEGEND:

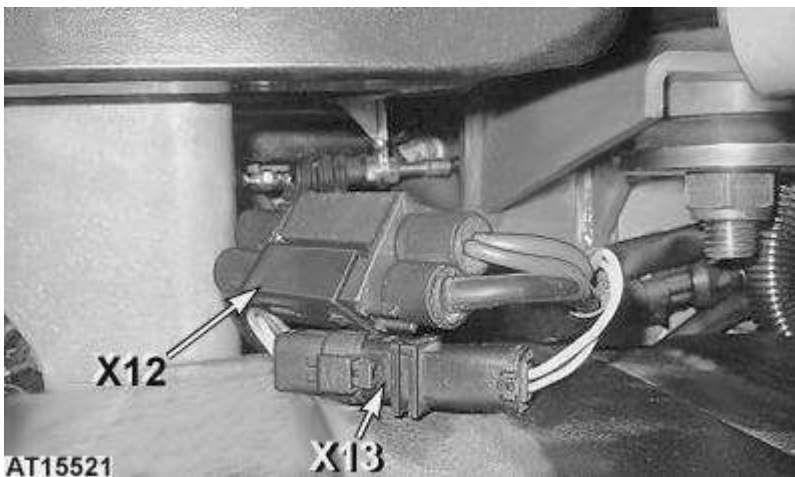
- 1 Red lead
- 2 Black lead
- X12 2-pin interconnection between wiring harnesses W04 and W05
- X13 2-pin interconnection between wiring harnesses W04 and W05 (air-conditioning system)

X13 - 2-Pin Interconnection between Wiring Harnesses W04 and W05 (Air-Conditioning System)



ATX013

X13 - 2-pin interconnection between wiring harnesses W04 and W05 (air-conditioning system)

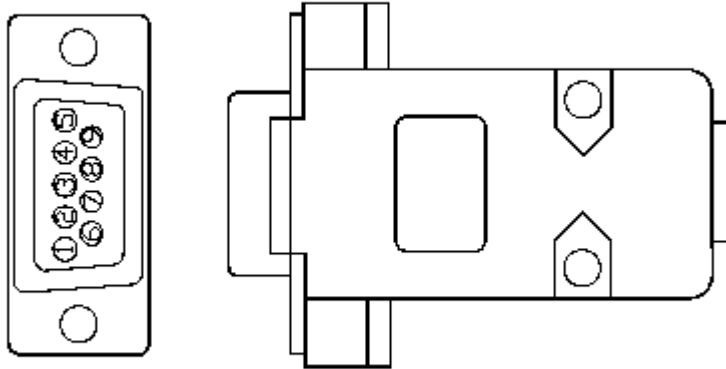


X13 - 2-pin interconnection between wiring harnesses W04 and W05 (air-conditioning system)

LEGEND:

- 1 Yellow lead
- 2 Orange lead
- X12 2-pin interconnection between wiring harnesses W04 and W05
- X13 2-pin interconnection between wiring harnesses W04 and W05 (air-conditioning system)

X16 - 9-Pin Com-Port for Diagnostic Connector (EHM or EHM II) to PC



ATX016

9-pin com-port for diagnostic connector (EHM or EHM II) to PC



AT15631

9-pin com-port for diagnostic connector (EHM or EHM II) to PC

LEGEND:

X16 9-pin com-port for diagnostic connector (EHM or EHM II) to PC

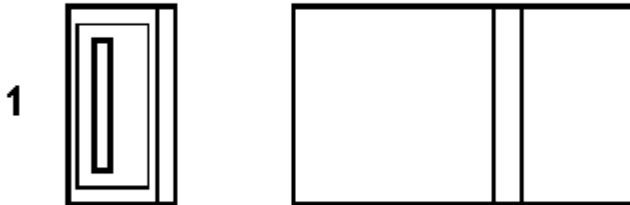
Component information

Component information	
Number of pins:	9
Connection Point:	To PC
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness (EHM) or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)

Plug layout

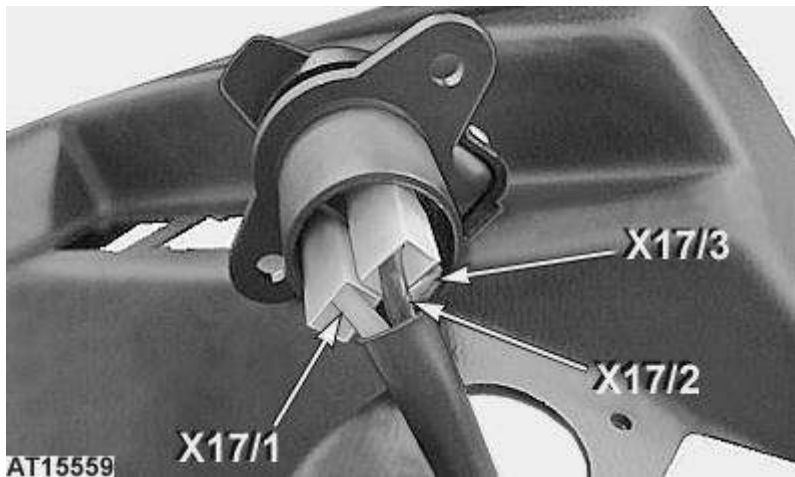
Plug layout	
Pin no.	Wire color
1	not used
2	white/black
3	white/green
4	not used
5	black
6	not used
7	not used
8	not used
9	not used

X17 - 3/1-Pin Connectors for 3-Pin Power Outlet



ATX017

3/1-pin connectors for 3-pin power outlet



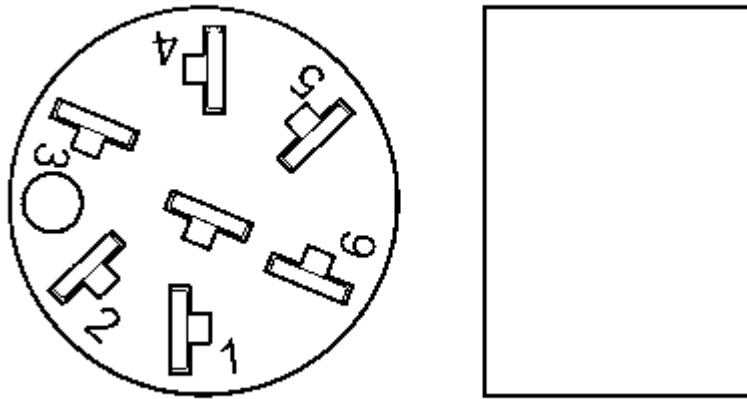
3/1-pin connectors for 3-pin power outlet

LEGEND:

- X17/1 1-pin connector for 3-pin power outlet (pink lead)
- X17/2 1-pin connector for 3-pin power outlet (black lead)
- X17/3 1-pin connector for 3-pin power outlet (brown lead)

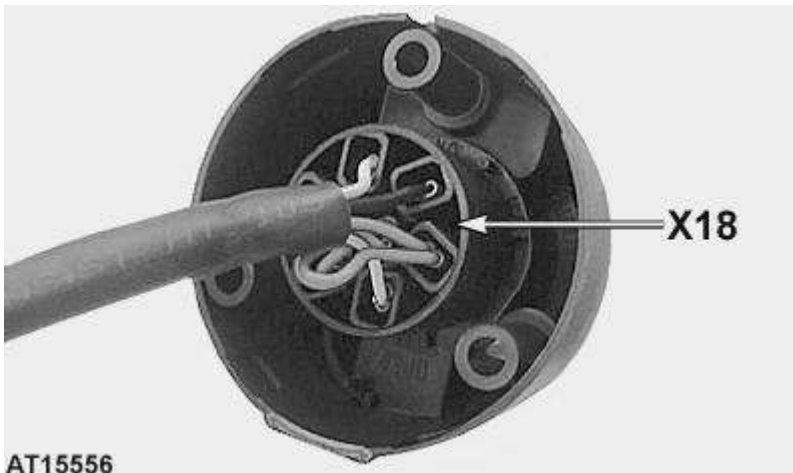
For extended check, see [SE14B - 3-Pin Connector X17 and Air Suspension Seat Compressor Motor M06, Diagnostic Schematic and Circuit Test](#) in this section.

X18 - 7-Pin Connector for 7-Pin Trailer Brake Socket



ATX018

7-pin connector for 7-pin trailer brake socket

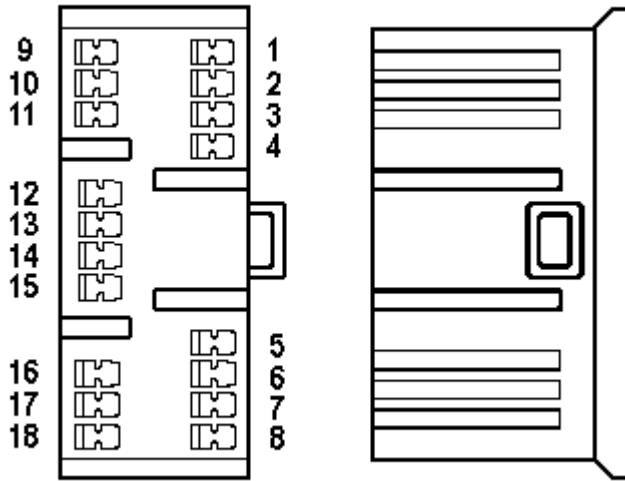


7-pin connector for 7-pin trailer brake socket

LEGEND:

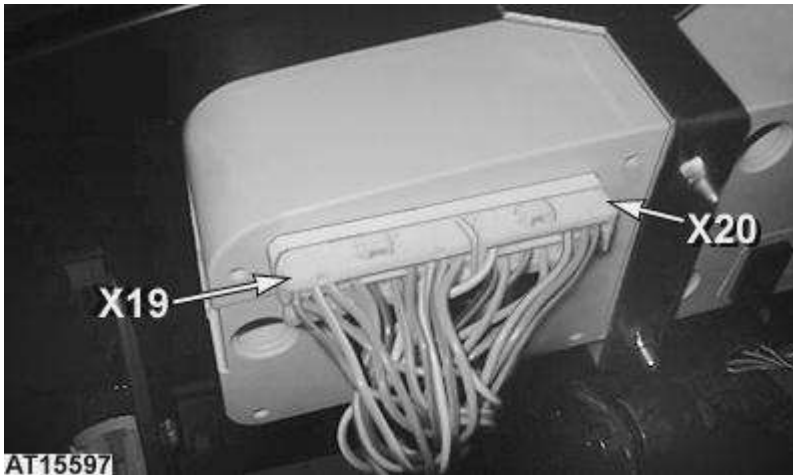
- 1 Light blue/black lead
- 2 Red lead
- 3 Black lead
- 4 Light blue lead
- 5 Yellow lead
- 6 Red lead
- 7 Yellow/black lead
- X18 7-pin connector for 7-pin trailer brake socket

X19 - 18-Pin Connector for Instrument Panel



ATX019

18-pin connector for instrument panel



18-pin connector for instrument panel

LEGEND:

- X19 18-pin connector for instrument panel
- X20 12-pin connector for instrument panel

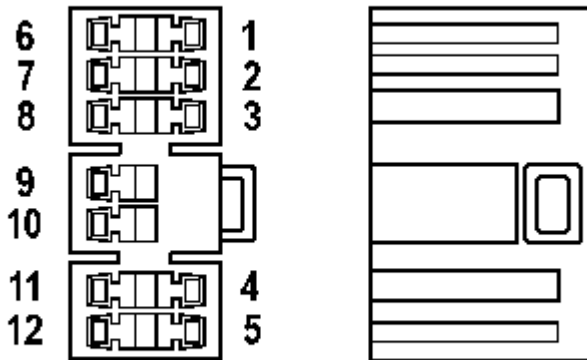
Component information

Component information	
Number of pins:	18
Connection Point:	Instrument panel
Wiring harness:	W02 - Main Wiring Harness and W16 - Fuse and Relay Box II Wiring Harness

Plug layout

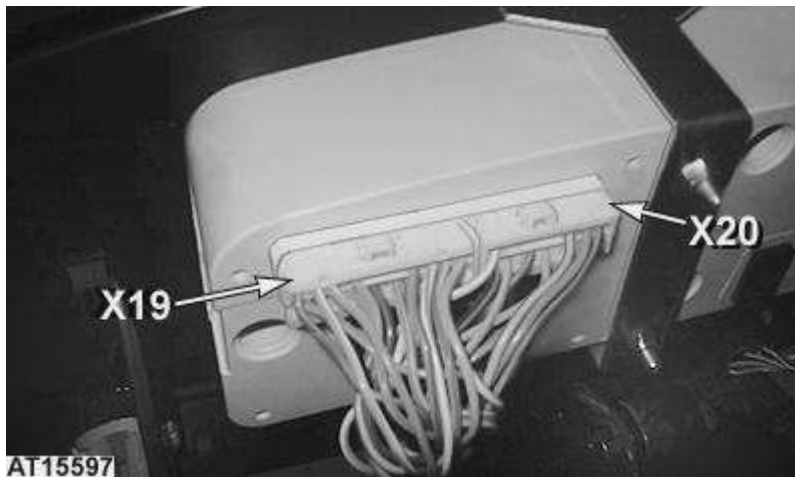
Plug layout	
Pin no.	Wire color
1	pink/yellow
2	red/yellow
3	white/green
4	orange/blue
5	grey/green
6	white/violet
7	white/grey
8	blue/yellow
9	white/orange
10	white/grey
11	light blue/white
12	red/grey
13	pink/green
14	red/blue
15	orange/blue
16	pink/blue
17	black
18	violet/green

X20 - 12-Pin Connector for Instrument Panel



ATX020

12-pin connector for instrument panel



12-pin connector for instrument panel

LEGEND:

- X19 18-pin connector for instrument panel
- X20 12-pin connector for instrument panel

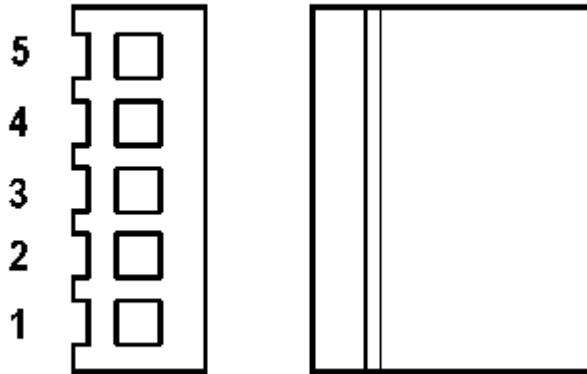
Component information

Component information	
Number of pins:	12
Connection Point:	Instrument panel
Wiring harness:	W02 - Main Wiring Harness and W16 - Fuse and Relay Box II Wiring Harness

Plug layout

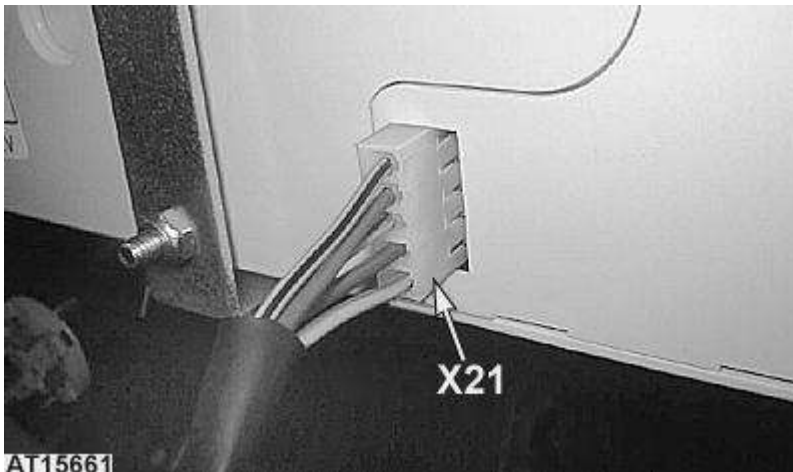
Plug layout	
Pin no.	Wire color
1	red/green
2	orange
3	yellow
4	not used
5	pink/white
6	violet/yellow
7	violet
8	green
9	grey
10	brown/yellow
11	yellow/green
12	orange/black

X21 - 5-Pin Connector for Instrument Panel (EHM or EHM II)



ATX021

5-pin connector for instrument panel (EHM or EHM II)



5-pin connector for instrument panel (EHM or EHM II)

LEGEND:

X21 5-pin connector for instrument panel (EHM or EHM II)

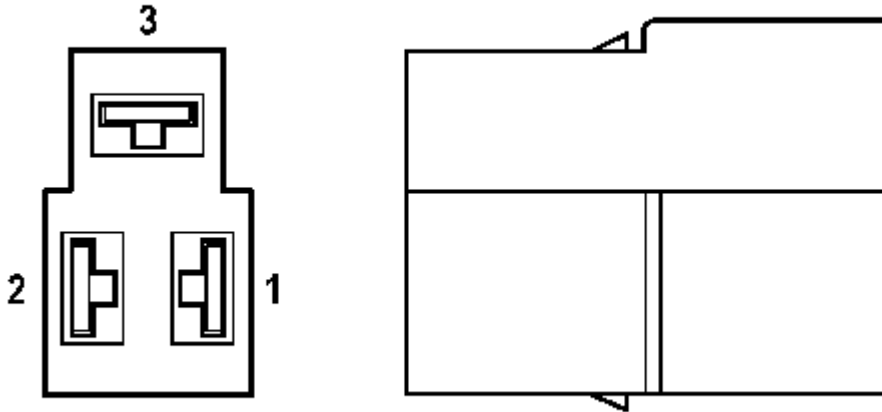
Component information

Component information	
Number of pins:	2
Connection Point:	to instrument panel (EHM or EHM II)
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness (EHM) or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)

Plug layout

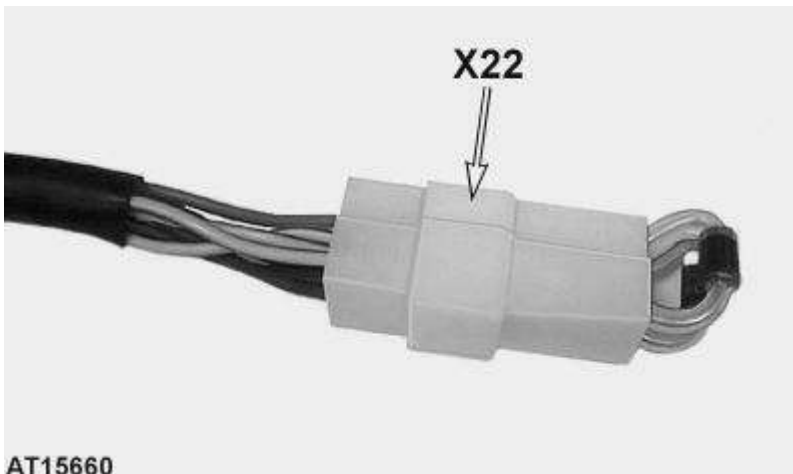
Plug layout	
Pin no.	Wire color
1	grey/black
2	brown
3	brown/yellow
4	violet/yellow
5	brown/pink

X22 - 3-Pin Connector for Diodes



ATX022

3-pin connector for diodes

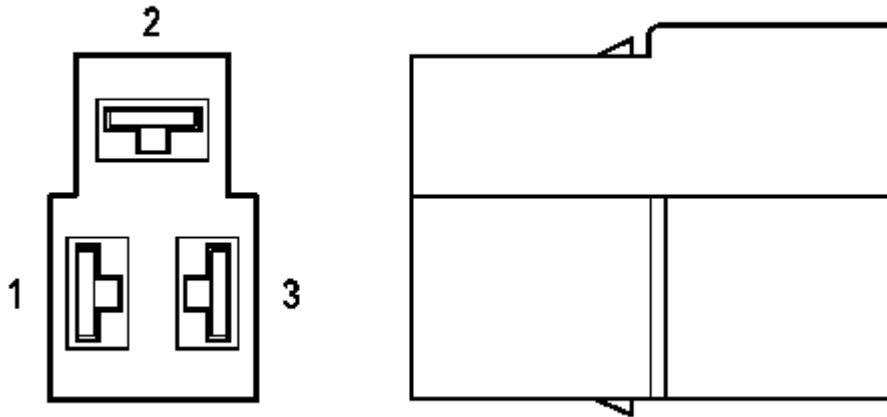


3-pin connector for diodes

LEGEND:

- 1 Brown lead
- 2 Brown/yellow lead
- 3 Light blue lead
- X22 3-pin connector for diodes

X23 - 3-Pin Connector for Hi-Lo Switches (S53 and S52)



ATX023

3-pin connector for Hi-Lo switches (S53 and S52)



3-pin connector for Hi-Lo switches

LEGEND:

- X23 3-pin connector for Hi-Lo switches (S53 and S52)
- XS54 1-pin connector for declutch switch S54

Component information

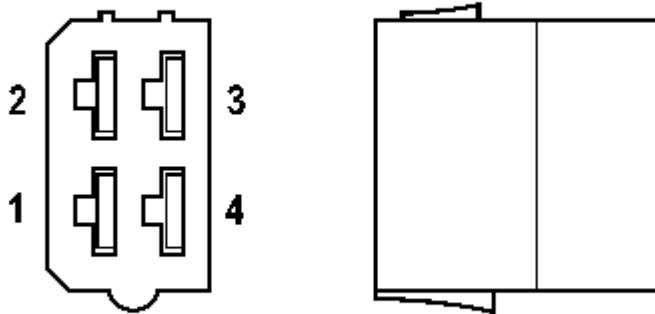
Component information	
Number of pins:	3
Connection Point:	S52 - Hi-Lo Solenoid Valve Switch (low) S53 - Hi-Lo Solenoid Valve Switch (high)
Wiring harness:	W02 - Main Wiring Harness and W16 - Fuse and Relay Box II Wiring Harness.

Component information	
Circuit:	SE27 - Electro-Hydraulic Hi-Lo, Diagnostic Schematic and Circuit Test

Plug layout

Plug layout	
Pin no.	Wire color
1	red/brown
2	white/brown
3	light blue/green

X24 - 4-Pin Connector for E03/2, E13, H32, H34/2 and H35 Lights I.h.



ATX024

4-pin connector for E03/2, E13, H32, H34/2 and H35 lights I.h.



4-pin connector for E03/2, E13, H32, H34/2 and H35 lights I.h.

LEGEND:

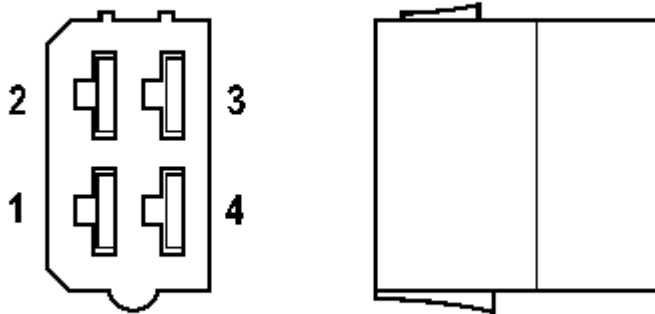
- 1 Light blue lead
- 2 Red lead
- 3 Black lead
- 4 Yellow lead
- X24 4-pin connector for E03/2, E13, H32, H34/2 and H35 lights I.h.

4-pin connector for following lights:

- [E03/2 - Clearance Light I.h. \(Tractors without Cab\)](#)
- [E13 - Tail Light I.h.](#)
- [H32 - Stop Light I.h.](#)
- [H34/2 - Turn Signal Light I.h. \(Front Side\) \(Tractors without Cab\)](#)

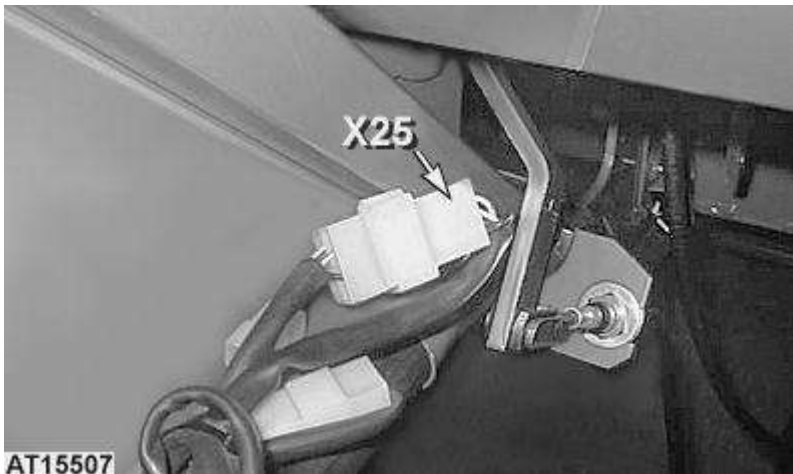
- [H35 - Turn Signal Light l.h. \(Back side\)](#)

X25 - 4-Pin Connector for E04/2, E14, H33, H44/2 and H45 Lights r.h.



ATX025

4-pin connector for E04/2, E14, H33, H44/2 and H45 lights r.h.



4-pin connector for E04/2, E14, H33, H44/2 and H45 lights r.h.

LEGEND:

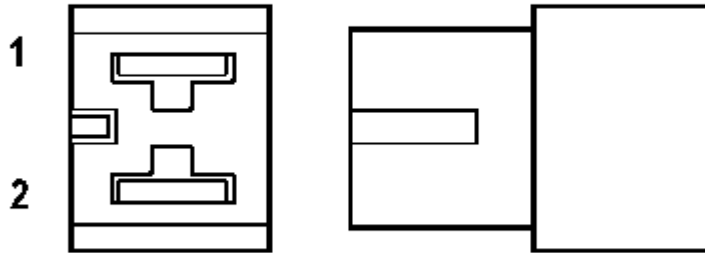
- 1 Light blue/black lead
- 2 Red lead
- 3 Black lead
- 4 Yellow/black lead
- X25 4-pin connector for E04/2, E14, H33, H44/2 and H45 lights r.h.

4-pin connector for following lights:

- [E04/2 - Clearance Light r.h. \(Tractors without Cab\)](#)
- [E14 - Tail Light r.h.](#)
- [H33 - Stop Light r.h.](#)
- [H44/2 - Turn Signal Light r.h. \(Front Side\) \(Tractors without Cab\)](#)

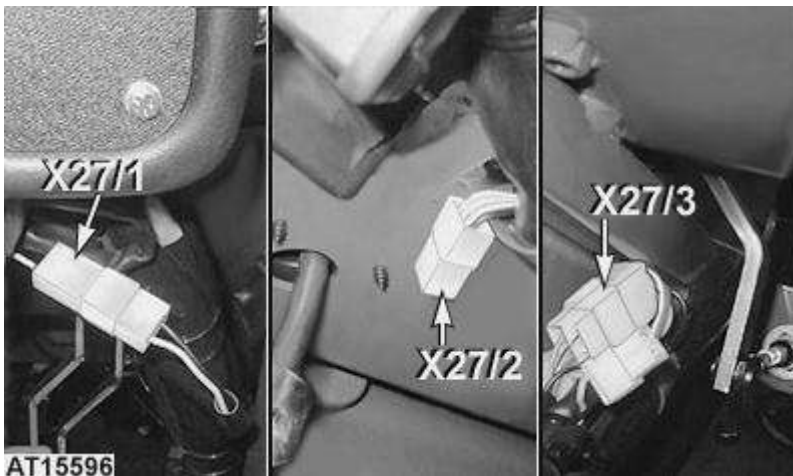
- [H45 - Turn Signal Light r.h. \(Back side\)](#)

X27 - 2-Pin Interconnection between Wiring Harnesses W02 and W08



ATX027

2-pin interconnection between Wiring harnesses W02 and W08

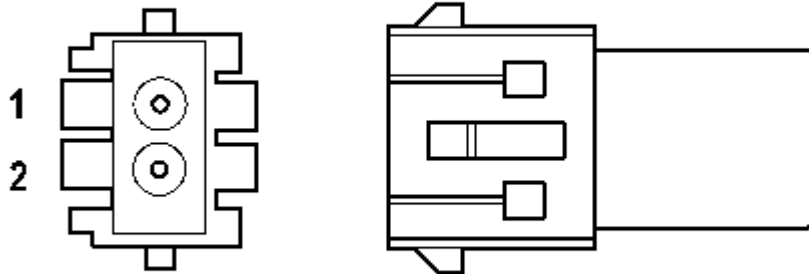


2-pin interconnection between wiring harnesses W02 and W08

LEGEND:

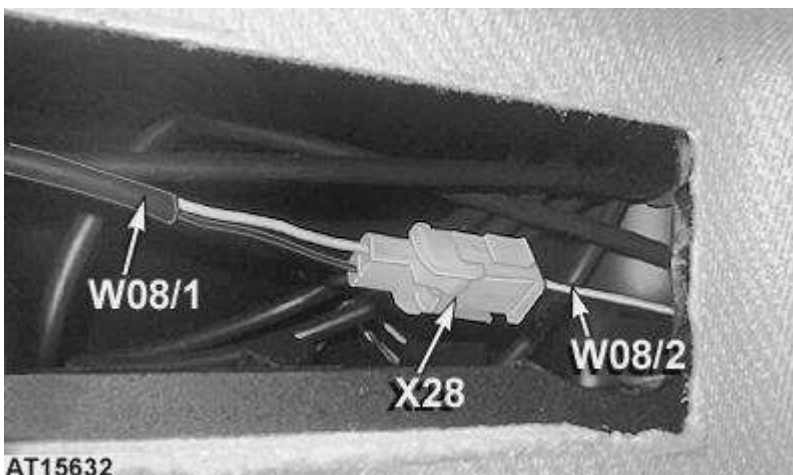
- 1 Black lead
- 2 Pink lead
- X27/1 2-pin interconnection between wiring harnesses W02 and W08 (position 1)
- X27/2 2-pin interconnection between wiring harnesses W02 and W08 (position 2)
- X27/3 2-pin interconnection between wiring harnesses W02 and W08 (position 3)

X28 - 2-Pin Interconnection between Wiring Harnesses W08/1 and W08/2



ATX028

2-pin interconnection between wiring harnesses W08/1 and W08/2



2-pin interconnection between wiring harnesses W08/1 and W08/2

LEGEND:

- W08/1 Beacon light wiring harness W08/1
- W08/2 Beacon light wiring harness W08/2
- X28 2-pin interconnection between wiring harnesses W08/1 and W08/2

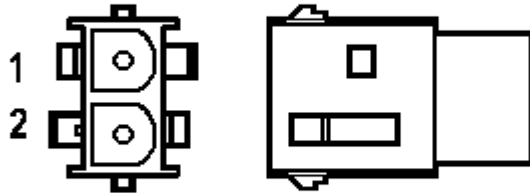
Component information

Component information	
Number of pins:	2
Wiring harness:	W08 - Beacon Light Wiring Harness

Plug layout

Plug layout	
Pin no.	Wire color
1	black
2	pink

X29/L - 2-Pin Interconnection between Wiring Harnesses W05 and W06/1L



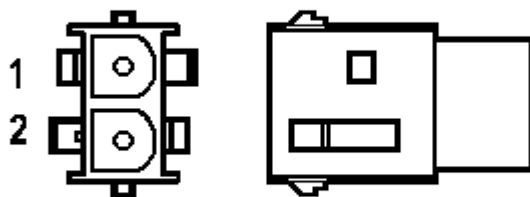
ATX29L

2-pin interconnection between wiring harnesses W05 and W06/1L

LEGEND:

- 1 Green lead
- 2 Black lead

X29/R - 2-Pin Interconnection between Wiring Harnesses W05 and W06/1R



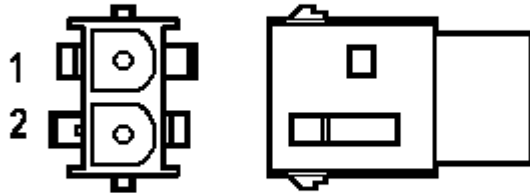
ATX29R

2-pin interconnection between wiring harnesses W05 and W06/1R

LEGEND:

- 1 Green lead
- 2 Black lead

X30/L - 2-Pin Interconnection between Wiring Harnesses W05 and W06/2L (Inner)



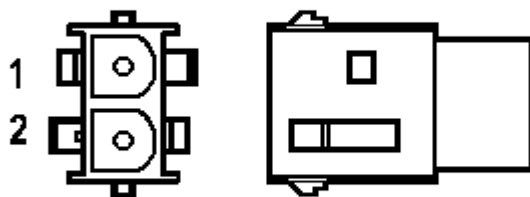
ATX30L

2-pin interconnection between wiring harnesses W05 and W06/2L (inner)

LEGEND:

- 1 Grey lead
- 2 Black lead

X30/R - 2-Pin Interconnection between Wiring Harnesses W05 and W06/2R (Inner)



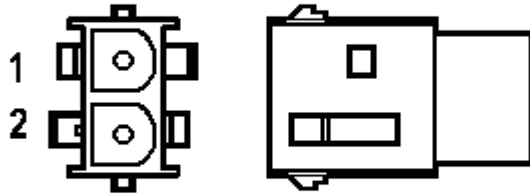
ATX30R

2-pin interconnection between wiring harnesses W05 and W06/2R (inner)

LEGEND:

- 1 Grey lead
- 2 Black lead

X31/L - 2-Pin Interconnection between Wiring Harnesses W05 and W06/3L (Outer)



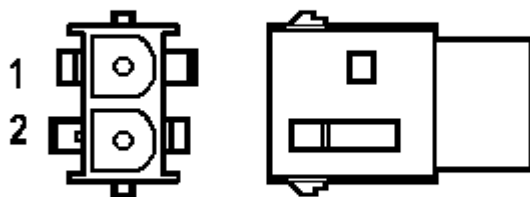
ATX31L

2-pin interconnection between wiring harnesses W05 and W06/3L (outer)

LEGEND:

- 1 Grey lead
- 2 Black lead

X31/R - 2-Pin Interconnection between Wiring Harnesses W05 and W06/3R (Outer)



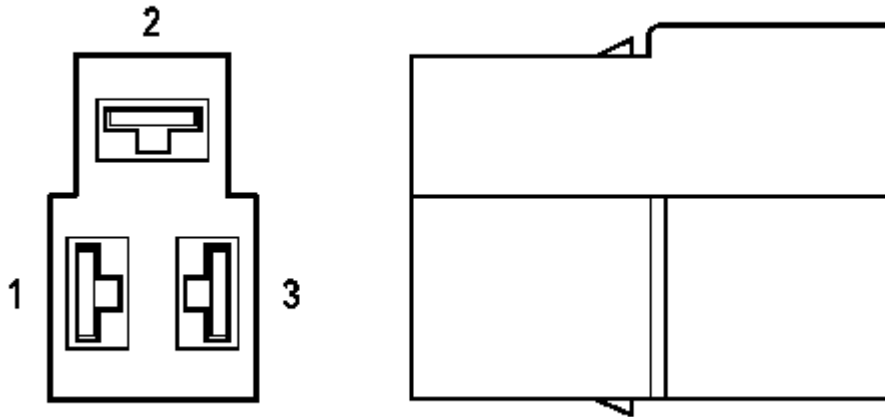
ATX31R

2-pin interconnection between wiring harnesses W05 and W06/3R (outer)

LEGEND:

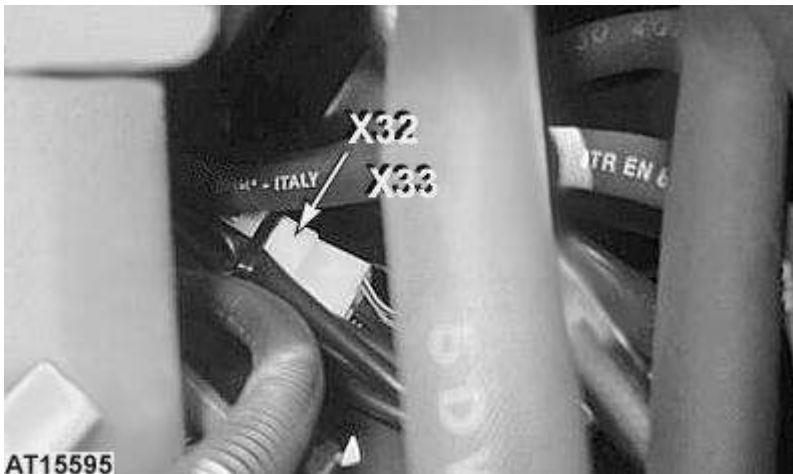
- 1 Grey lead
- 2 Black lead

X32 - 3-Pin Connector for E03/1 and H34/1 Lights I.h. (Tractors with Cab)



ATX032

3-pin connector for E03/1 and H34/1 lights I.h. (tractors with cab)



3-pin connector for E03/1 and H34/1 lights I.h. (tractors with cab)

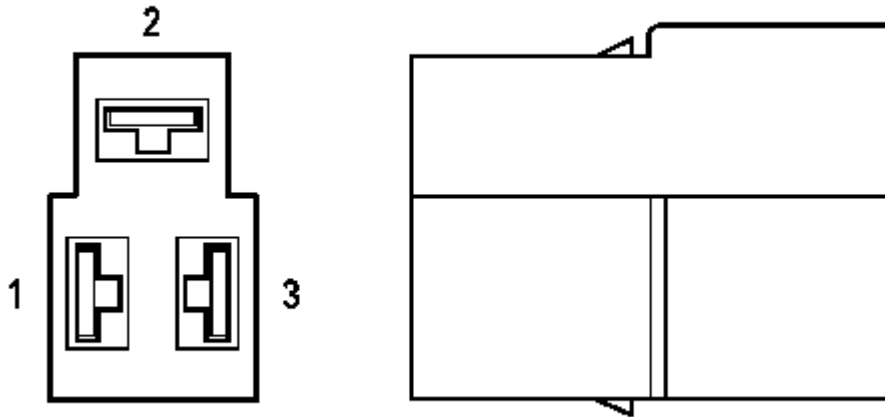
LEGEND:

- 1 Light blue lead
- 2 Black lead
- 3 Yellow/black lead
- X32 3-pin connector for E03/1 and H34/1 lights I.h. (tractors with cab)
- X33 3-pin connector for E04/1 and H44/1 lights r.h. (tractors with cab)

3-pin connector for following lights:

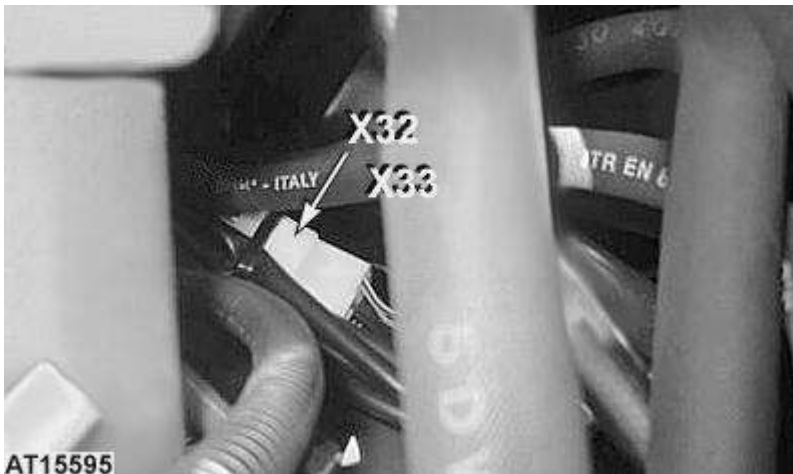
- [E03/1 - Clearance Light I.h. \(Tractors with Cab\)](#)
- [H34/1 - Turn Signal Light I.h. \(Tractors with Cab\)](#)

X33 - 3-Pin Connector for E04/1 and H44/1 Lights r.h. (Tractors with Cab)



ATX032

3-pin connector for E04/1 and H44/1 lights r.h. (tractors with cab)



3-pin connector for E04/1 and H44/1 lights r.h. (tractors with cab)

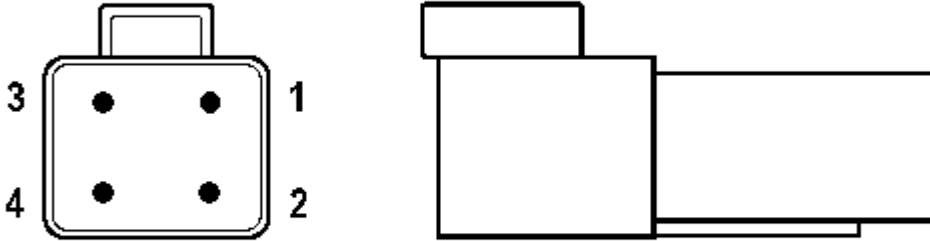
LEGEND:

- 1 Light blue/black lead
- 2 Black lead
- 3 Yellow lead
- X32 3-pin connector for E03/1 and H34/1 lights l.h. (tractors with cab)
- X33 3-pin connector for E04/1 and H44/1 lights r.h. (tractors with cab)

3-pin connector for following lights:

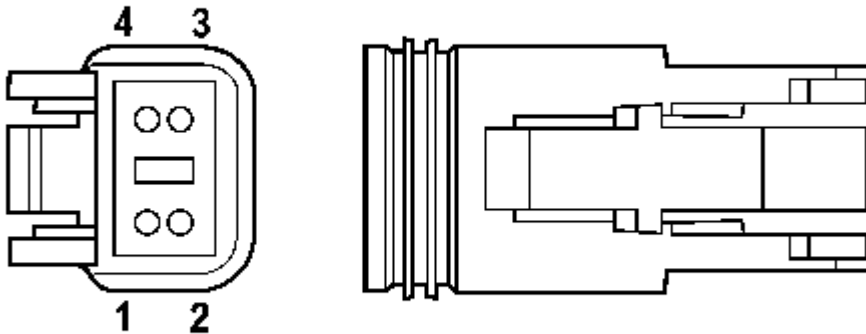
- [E04/1 - Clearance Light r.h. \(Tractors with Cab\)](#)
- [H44/1 - Turn Signal Light r.h. \(Tractors with Cab\)](#)

X41 - 4-Pin Interconnection between Wiring Harnesses W11/1 and W11/2 (EHS)



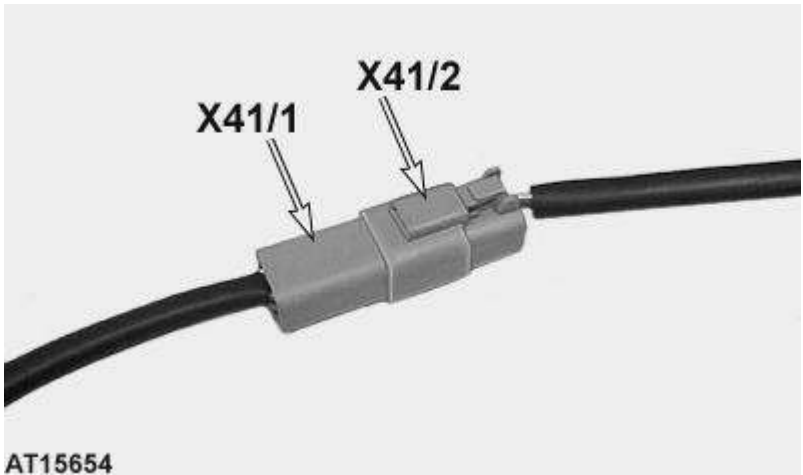
ATX0411

4-pin connector on EHS wiring harness W11/1



ATX0412

4-pin connector on adapter wiring harness W11/2 (EHS)



4-pin interconnection between wiring harnesses W11/1 and W11/2 (EHS)

LEGEND:

- X41/1 4-pin interconnection between wiring harnesses W11/1 and W11/2 (EHS)
- X41/2 4-pin interconnection between wiring harnesses W11/2 and W11/1 (EHS)

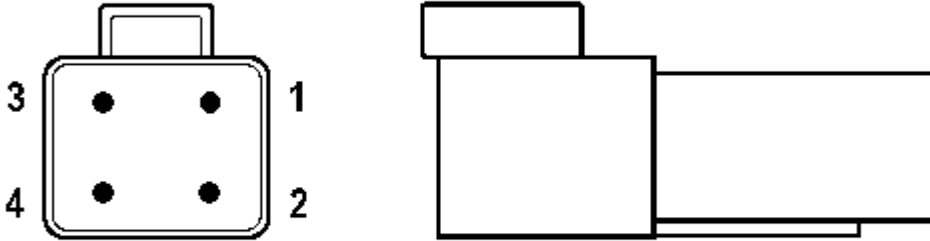
Component information

Component information	
Number of pins:	4
Connection Point:	Interconnection between wiring harnesses W11/1 and W11/2 (EHS)
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS)
Circuit:	SE15A - Hitch Remote Control Switch S68 (EHS), Diagnostic Schematic and Circuit Test

Plug layout

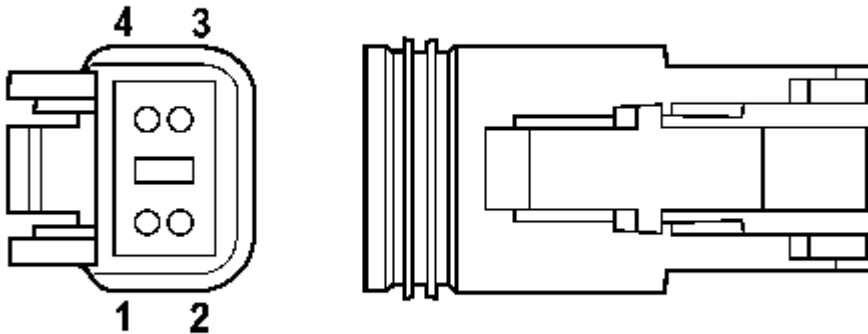
Plug layout		
Pin no.	Wire color on: W11/1 - EHS wiring harness	Wire color on: W11/2 - adapter wiring harness (EHS)
1	white	white
2	yellow	yellow
3	green	green
4	brown	brown

X41 II - 4-Pin Interconnection between Wiring Harnesses W11 II/1 and W11 II/2 (EHS II)



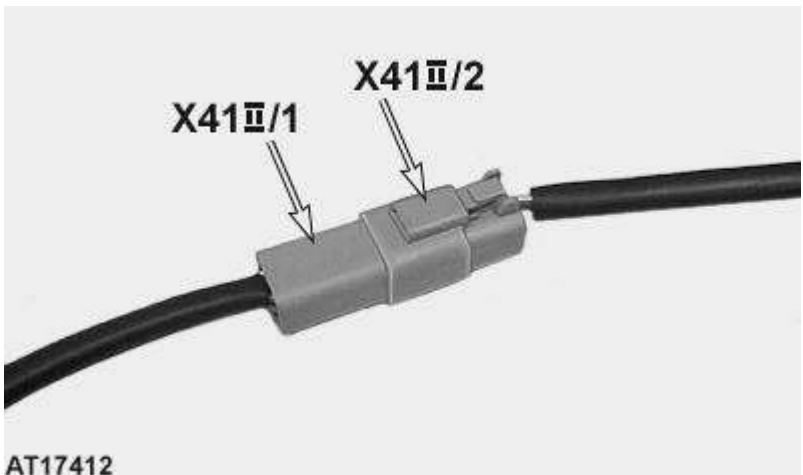
ATX0411

4-pin connector on EHS II wiring harness W11 II/1



ATX0412

4-pin connector on adapter wiring harness W11 II/2 (EHS II)



4-pin interconnection between wiring harnesses W11 II/1 and W11 II/2 (EHS)

LEGEND:

- X41 II /1 4-pin connector on EHS II wiring harness W11 II/1
- X41 II /2 4-pin connector on adapter wiring harness W11 II/2 (EHS II)

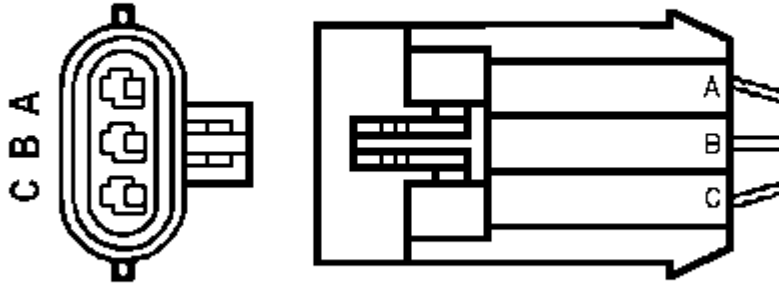
Component information

Component information	
Number of pins:	4
Connection Point:	Interconnection between wiring harnesses W11 II/1 and W11 II/2 (EHS II)
Wiring harness:	W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15B - Hitch Remote Control Switch S68 II (EHS II), Diagnostic Schematic and Circuit Test

Plug layout

Plug layout		
Pin no.	Wire color on: W11 II/1 - EHS II wiring harness	Wire color on: W11 II/2 - adapter wiring harness (EHS II)
1	white	white
2	yellow	yellow
3	green	green
4	brown	brown

X42 - 3-Pin Connector for Diagnostic (EHS) to PC



ATX042

3-pin connector for diagnostic (EHS) to PC



3-pin connector for diagnostic (EHS) to PC

LEGEND:

X42 3-pin connector for diagnostic (EHS) to PC

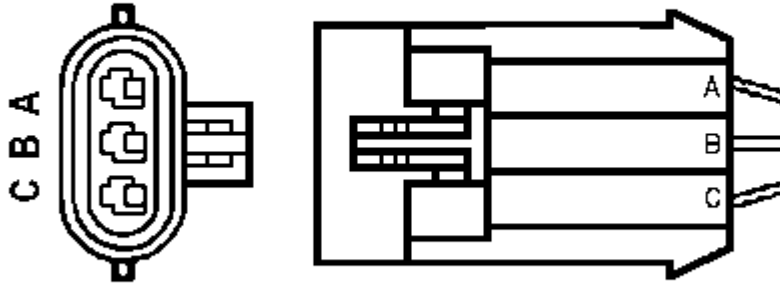
Component information

Component information	
Number of pins:	3
Connection Point:	To PC
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS)
Circuit:	SE15A - 3-Pin Connector X42 for Diagnostic (EHS) to PC, Diagnostic Schematic and Circuit Test

Plug layout

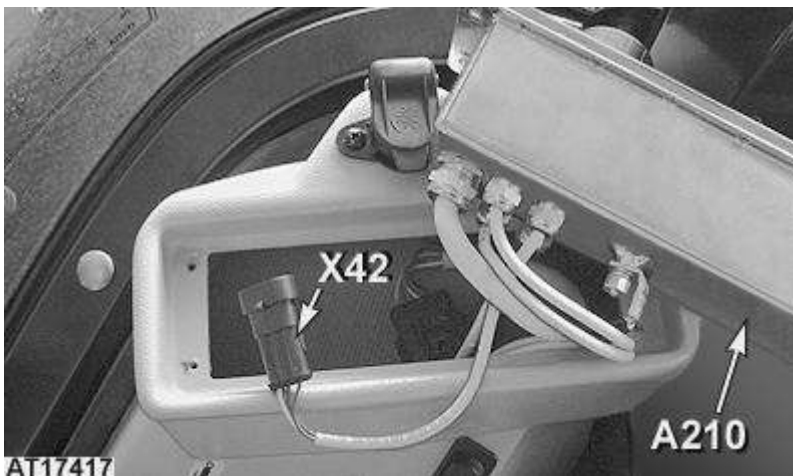
Plug layout	
Pin no.	Wire color
A	red/brown
B	white/brown
C	light blue/green

X42 II - 3-Pin Connector for Diagnostic (EHS II) to PC



ATX042

3-pin connector for diagnostic (EHS II) to PC



3-pin connector for diagnostic (EHS II) to PC

LEGEND:

- A210 EHS II control panel
- X42 II 3-pin connector for diagnostic (EHS II) to PC

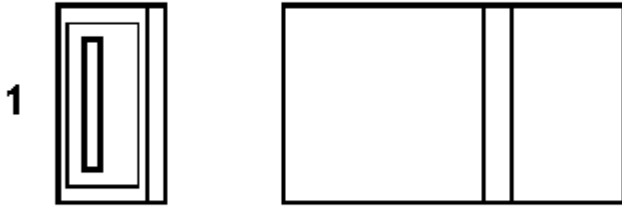
Component information

Component information	
Number of pins:	3
Connection Point:	To PC
Wiring harness:	W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)

Plug layout

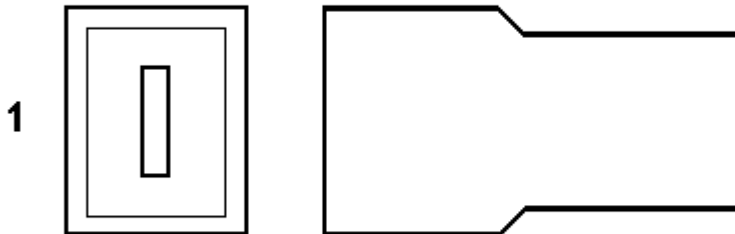
Plug layout	
Pin no.	Wire color
A	red/brown
B	white/brown
C	light blue/green

X43 - 1-Pin Interconnections between Relay K18 and Alternator G02 (+15)



ATX0431

1-pin interconnection between relay K18 and alternator G02 (+15)



ATX0432

1-pin interconnection between relay K18 and alternator G02 (+15)



2/1-pin interconnections between relay K18 and alternator G02 (+15)

LEGEND:

- X43/1 1-pin interconnection between relay K18 and alternator G02 (+15) (black lead)
- X43/2 1-pin interconnection between relay K18 and alternator G02 (+15) (black lead)

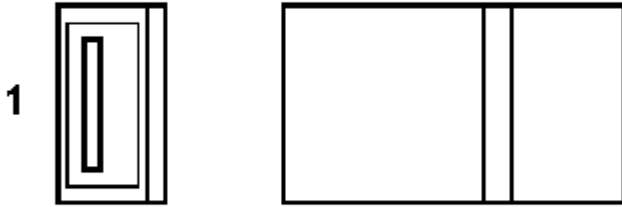
Component information

Component information	
Number of pins:	1
Connection Point:	Interconnection between relay K18 and alternator G02
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS)
Circuit:	SE15A - Power Supply of EHS System, Diagnostic Schematic and Circuit Test

Plug layout

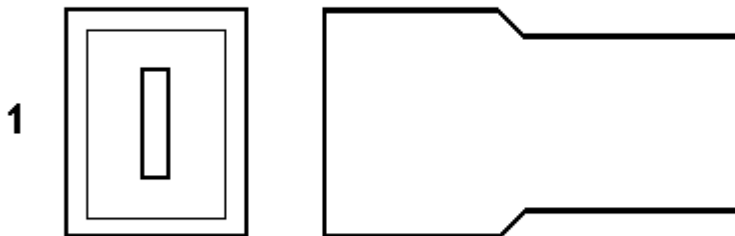
Plug layout	
Pin no.	Wire color
1	black

X43 II - 1-Pin Interconnections between Relay K18 II and Alternator G02 (+15)



ATX0431

1-pin interconnection between relay K18 II and alternator G02 (+15)



ATX0432

1-pin interconnection between relay K18 II and alternator G02 (+15)



1-pin interconnections between relay K18 II and alternator G02 (+15)

LEGEND:

- X43 II/1 1-pin interconnection between relay K18 II and alternator G02 (+15) (black lead)
- X43 II/2 1-pin interconnection between relay K18 II and alternator G02 (+15) (black lead)

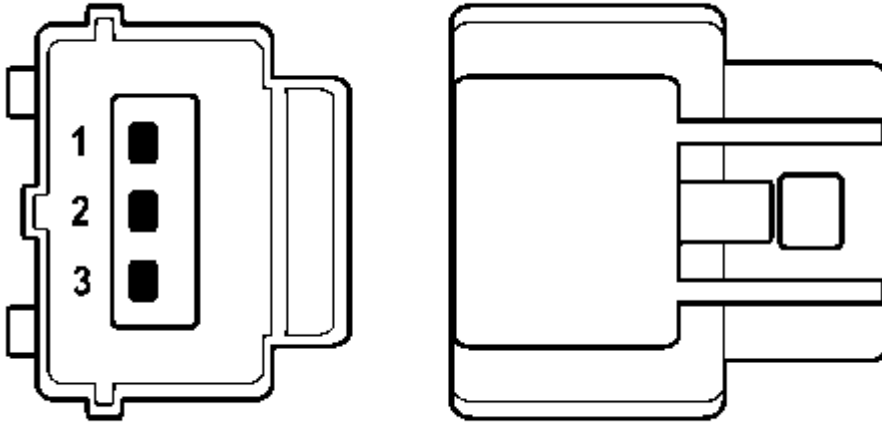
Component information

Component information	
Number of pins:	1
Connection Point:	Interconnection between relay <u>K18 II</u> and alternator <u>G02</u>
Wiring harness:	<u>W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)</u>
Circuit:	<u>SE15B - Power Supply of EHS II System, Diagnostic Schematic and Circuit Test</u>

Plug layout

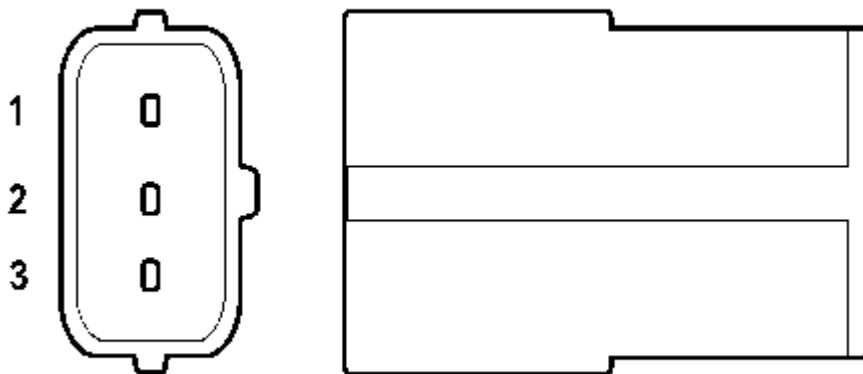
Plug layout	
Pin no.	Wire color
1	black

X44 II- 3-Pin Interconnection between EHS II Control Panel A210 and Adapter Wiring Harness W11 II/3 (EHS II)



ATX44II1

X44 II/1 - 3-pin connector on EHS II control panel A210



ATX44II2

X44 II/2 - 3-pin connector on adapter wiring harness W11 II/3 (EHS II)



3-pin interconnection between EHS II control panel A210 and adapter wiring Harness W11 II/3 (EHS II)

LEGEND:

- A210 EHS II control panel
- X44 II/1 3-pin connector on EHS II control panel A210
- X44 II/2 3-pin connector on adapter wiring Harness W11 II/3 (EHS II)

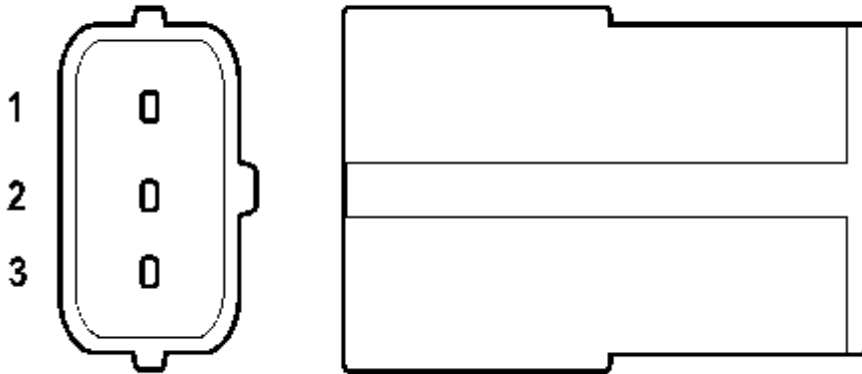
Component information

Component information	
Number of pins:	3
Wiring harness:	W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15B - Raise Limiting Switch S200 (EHS II), Diagnostic Schematic and Circuit Test

Plug layout

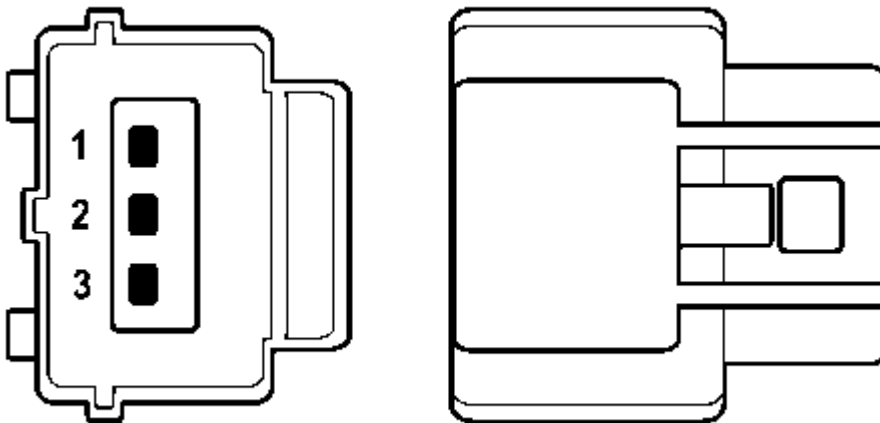
Plug layout		
Pin no.	Wire color on: EHS II control panel A210	Wire color on: W11 II/3 - adapter wiring harness (EHS II)
1	green	brown
2	brown	green
3	white	white

X45 II - 3-Pin Interconnection between EHS II Control Panel A210 and Adapter Wiring Harness W11 II/4 (EHS II)



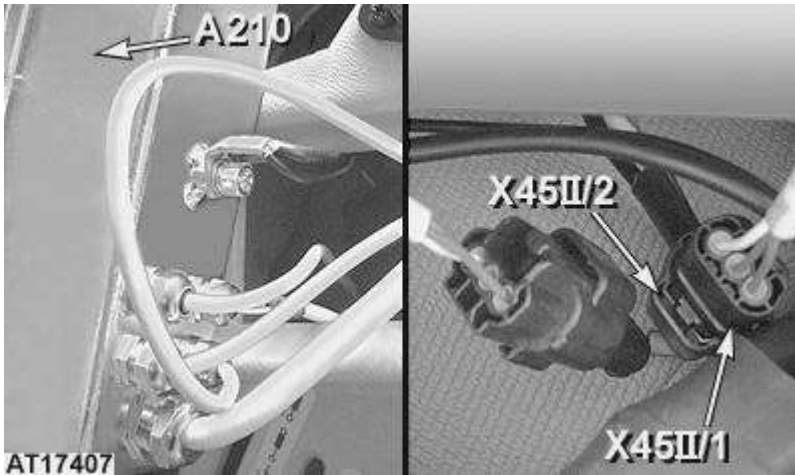
ATX45II1

X45 II/1 - 3-pin connector on EHS II control panel A210



ATX45II2

X45 II/2 - 3-pin connector on adapter wiring harness W11 II/4 (EHS II)



3-pin interconnection between EHS II control panel A210 and adapter wiring Harness W11 II/4 (EHS II)

LEGEND:

- A210 EHS II control panel
- X45 II/1 3-pin connector on EHS II control panel A210
- X45 II/2 3-pin connector on adapter wiring Harness W11 II/4 (EHS II)

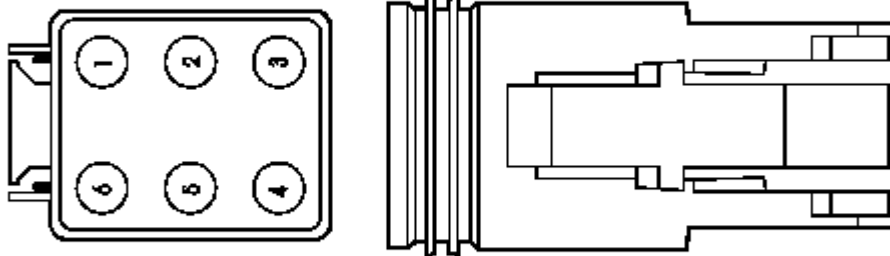
Component information

Component information	
Number of pins:	3
Wiring harness:	W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15B - Draft Sensor B201 II (EHS II), Diagnostic Schematic and Circuit Test

Plug layout

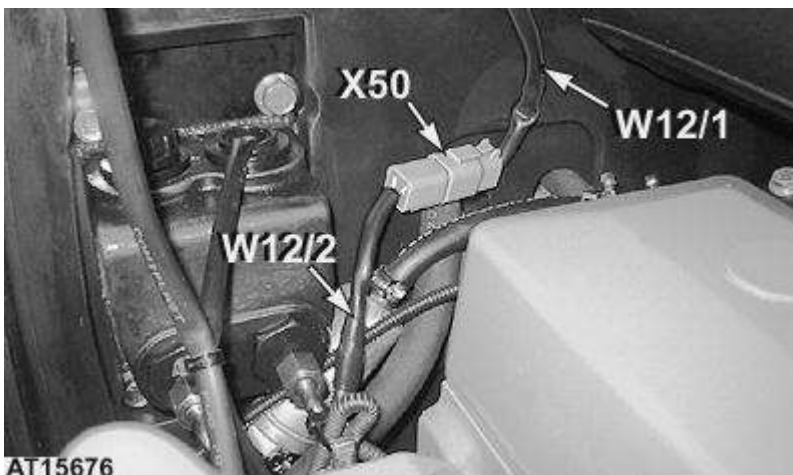
Plug layout		
Pin no.	Wire color on: EHS II control panel A210	Wire color on: W11 II/4 - adapter wiring harness (EHS II)
1	green	white
2	brown	green
3	white	brown

X50 - 6-Pin Interconnection between Wiring Harnesses W12/1 and W12/2



ATX050

6-pin interconnection between wiring harnesses W12/1 and W12/2



6-pin interconnection between wiring harnesses W12/1 and W12/2

LEGEND:

- W12/1 Shut-off system wiring harness (EHM) (cab side)
- W12/2 Shut-off system wiring harness (EHM) (engine/transm. side)
- X50 6-pin interconnection between wiring harnesses W12/1 and W12/2

Component information

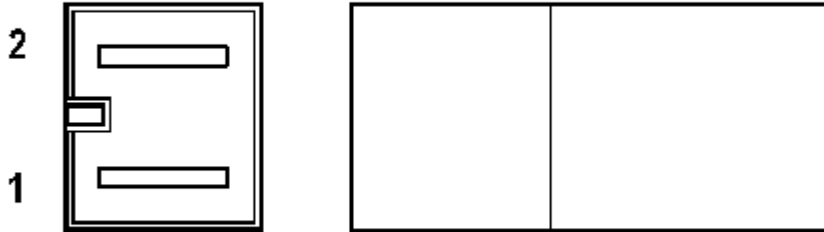
Component information	
Number of pins:	6
Wiring harness:	W12 - Shut-Off System Wiring Harness (EHM)

Component information	
Circuit:	SE26A - Power Supply to Shut-Off System (EHM), Diagnostic Schematic and Circuit Test and/or SE26A - Transmission Oil Pressure Sensors of Shut-Off System (EHM), Diagnostic Schematic and Circuit Test and/or SE26A - Shut-Off Solenoid Valve of Shut-Off System (EHM), Diagnostic Schematic and Circuit Test

Plug layout

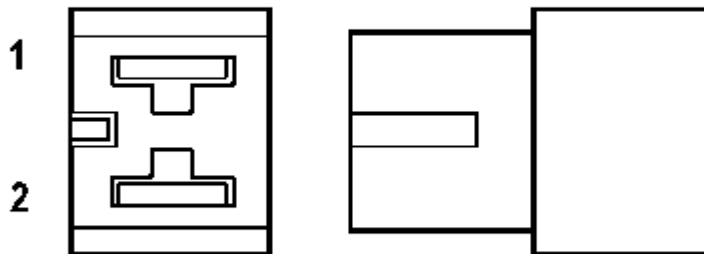
Plug layout X50	
Pin no.	Wire color
1	white/red
2	white/red
3	black
4	blue/black
5	light blue/red
6	light blue/yellow

X51 - 2/2-Pin Interconnections to Ground between Wiring Harnesses W03 and W12



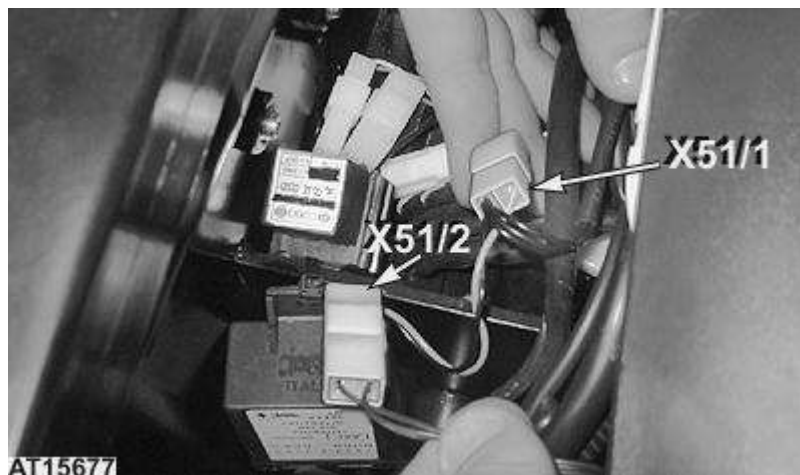
ATX0511

2-pin interconnection to ground between wiring harnesses W03 and W12



ATX0512

2-pin interconnection to ground between wiring harnesses W03 and W12

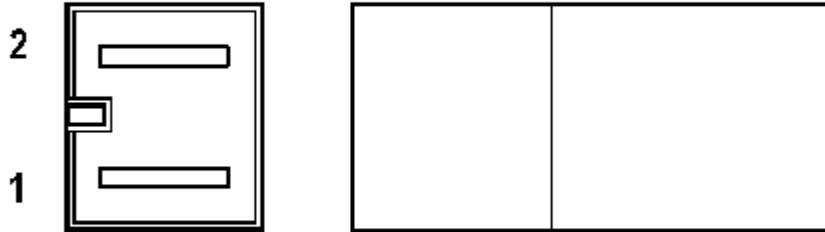


2/2-pin interconnections to ground between wiring harnesses W03 and W12

LEGEND:

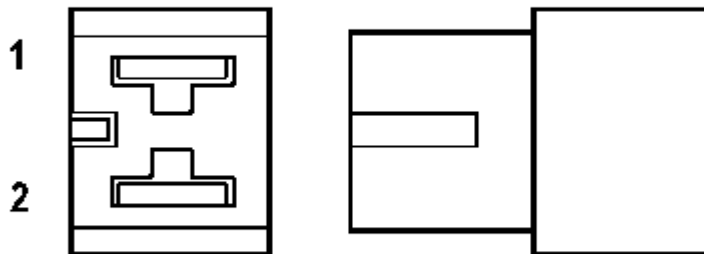
- 1 Violet/green lead
- 2 Black lead
- X51/1 2-pin interconnection to ground between wiring harnesses W03 and W12
- X51/2 2-pin interconnection to ground between wiring harnesses W03 and W12

X52 - 2/2-Pin Interconnections between Warning Light H50 (EHM) and Wiring Harness W12



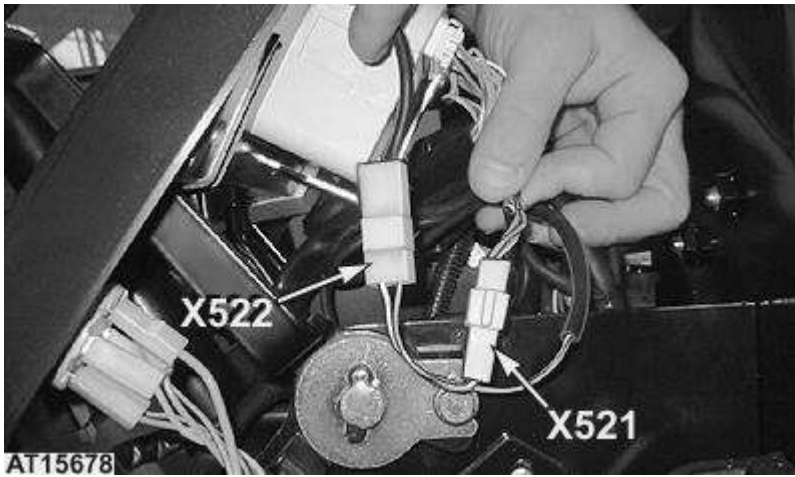
ATX0521

2-pin interconnection between warning light H50 (EHM) and wiring harness W12



ATX0522

2-pin interconnection between warning light H50 (EHM) and wiring harness W12



2/2-pin interconnections between warning light H50 (EHM) and wiring harness W12

LEGEND:

- X52/1 2-pin interconnection between warning light H50 (EHM) and wiring harness W12
- X52/2 2-pin interconnection between warning light H50 (EHM) and wiring harness W12

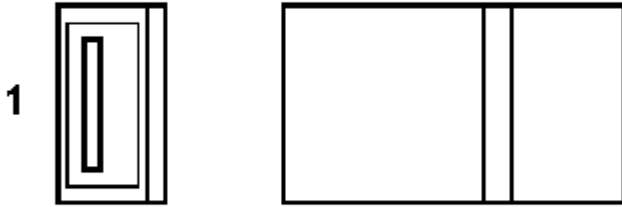
Component information

Component information	
Number of pins:	2/2
Connection Point:	H50 - Warning Light (EHM or EHM II) and W12 - Shut-Off System Wiring Harness (EHM)
Wiring harness:	W12 - Shut-Off System Wiring Harness (EHM)
Circuit:	SE26A - Shut-Off System (EHM), Functional Schematic and Theory of Operation

Plug layout

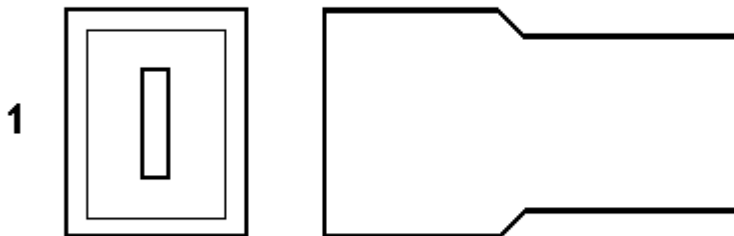
Plug layout	
Pin no.	Wire color
X52/1	white/red
X52/2	grey/black

X53 - 2/1-Pin Interconnections between Clutch Pedal Switch S72 (EHM) and Wiring Harness W12



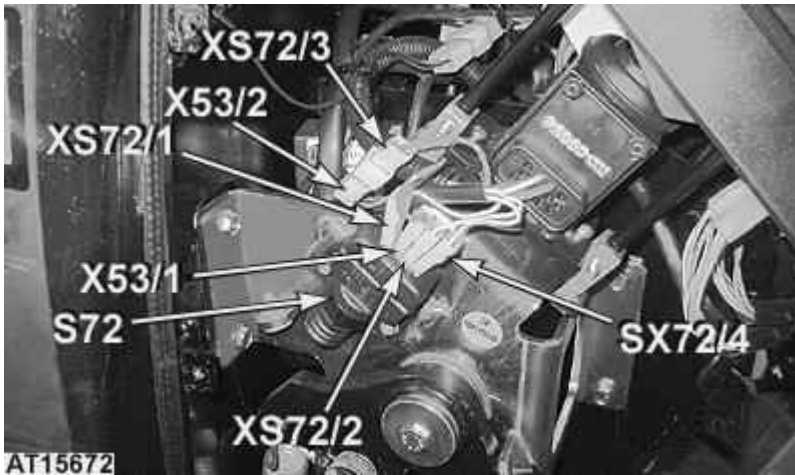
ATX0531

1-pin interconnection between clutch pedal switch S72 (EHM) and wiring harness W12



ATX0532

1-pin interconnection between clutch pedal switch S72 (EHM) and wiring harness W12



2/1-pin interconnections between clutch pedal switch S72 (EHM) and wiring harness W12

LEGEND:

- S72 Clutch pedal switch (EHM or EHM II)
- X53 2/1-pin interconnections between clutch pedal switch S72 (EHM) and wiring harness W12
- XS72 4/1-pin connectors for clutch pedal switch S72 (EHM or EHM II)

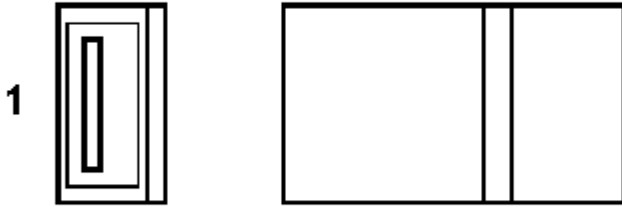
Component information

Component information	
Number of pins:	2/1
Connection Point:	S72 - Clutch Pedal Switch (EHM or EHM II) and W12 - Shut-Off System Wiring Harness (EHM)
Wiring harness:	W12 - Shut-Off System Wiring Harness (EHM)
Circuit:	SE26A - Shut-Off System (EHM), Functional Schematic and Theory of Operation

Plug layout

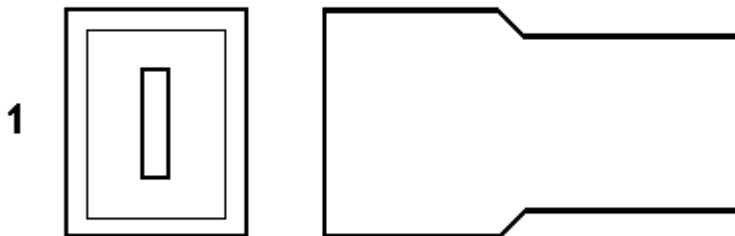
Plug layout	
Pin no.	Wire color
X53/1	blue/red
X53/2	blue/red

X54 - 2/1-Pin Interconnections between Alternator G02 and Wiring Harness W12



ATX0541

1-pin interconnection between alternator G02 and wiring harness W12



ATX0542

1-pin interconnection between alternator G02 and wiring harness W12



2/1-pin interconnections between alternator G02 and wiring harness W12

LEGEND:

- X54/1 1-pin interconnection between alternator G02 and wiring harness W12
- X54/2 1-pin interconnection between alternator G02 and wiring harness W12

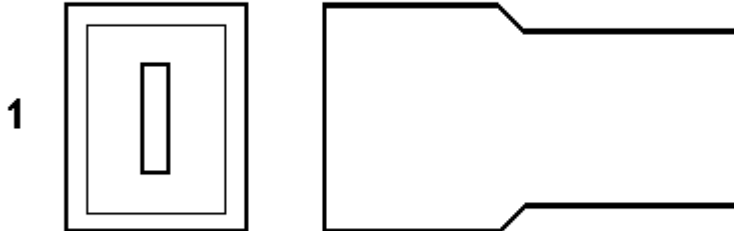
Component information

Component information	
Number of pins:	2/2
Connection Point:	H50 - Warning Light (EHM or EHM II) and W12 - Shut-Off System Wiring Harness (EHM)
Wiring harness:	W12 - Shut-Off System Wiring Harness (EHM)
Circuit:	SE26A - Shut-Off System (EHM), Functional Schematic and Theory of Operation

Plug layout

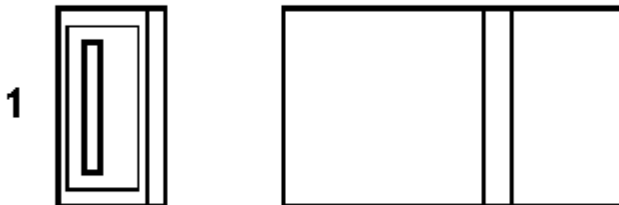
Plug layout	
Pin no.	Wire color
X54/1	blue/red
X54/2	blue/red

X55 - 1-Pin Interconnection between Wiring Harnesses W01 and W02



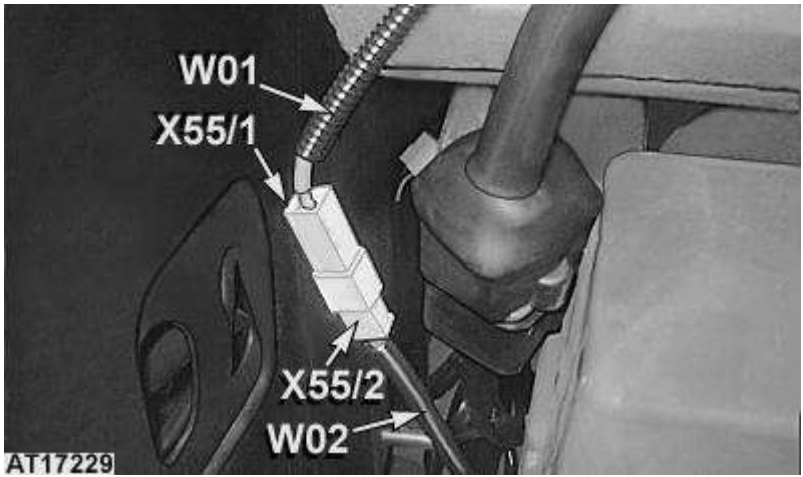
ATX0551

1-pin connection of wiring harness W01



ATX0552

1-pin connection of wiring harness W02



1-pin interconnection between wiring harnesses W01 and W02

LEGEND:

- X55/1 1-pin interconnection between wiring harnesses W01 and W02
- X55/2 1-pin interconnection between wiring harnesses W02 and W01
- W01 Engine wiring harness
- W02 Main wiring harness

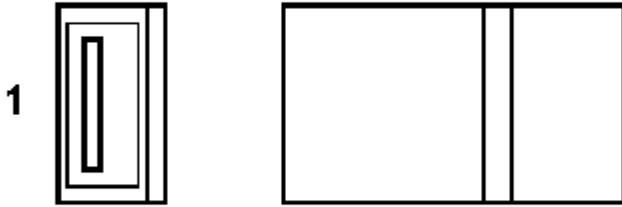
Component information

Component information	
Number of pins:	1
Connection Point:	W01 - Engine Wiring Harness and W02 - Main Wiring Harness
Wiring harness:	W01 - Engine Wiring Harness and W02 - Main Wiring Harness

Plug layout

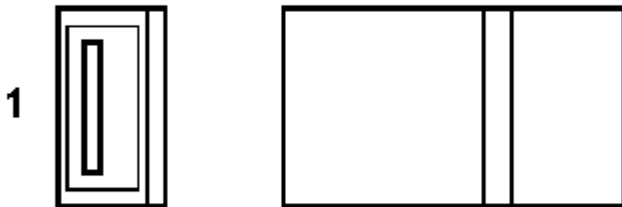
Plug layout	
Pin no.	Wire color
1	blue

X56 - 2/1-Pin Interconnections between Wiring Harnesses W05 and W14



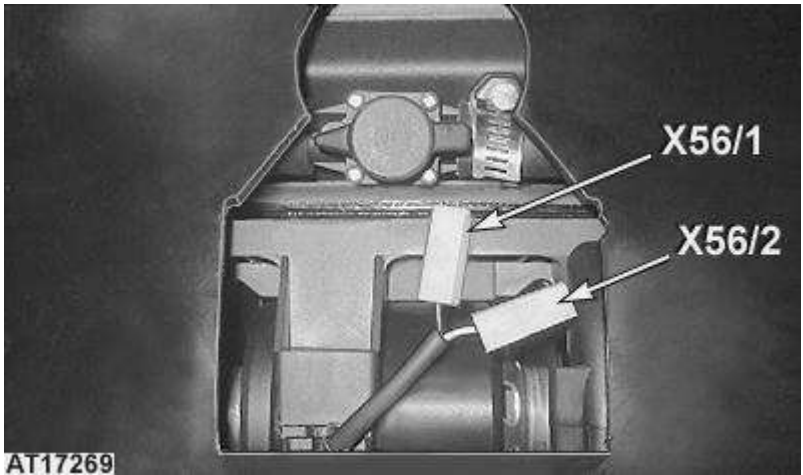
ATX561

1-pin connector



ATX562

1-pin connector



2/1-pin interconnections between wiring harnesses W05 and W14

LEGEND:

- W05 Cab wiring harness
- W14 Fan and air-conditioning wiring harness
- X56 2/1-pin interconnections between wiring harnesses W05 and W14

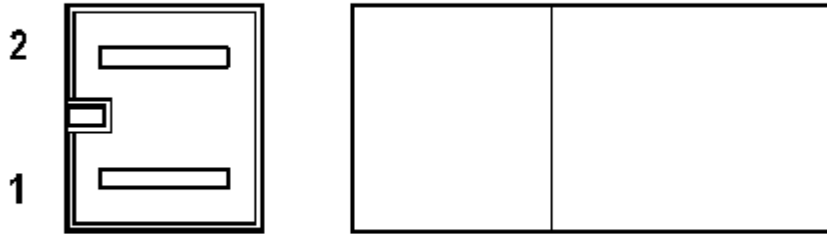
Component information

Component information	
Number of pins:	2/1
Connection Point:	W05 - Cab Wiring Harness and W14 - Fan and Air-Conditioning Wiring Harness
Wiring harness:	W05 - Cab Wiring Harness and W14 - Fan and Air-Conditioning Wiring Harness
Circuit:	SE10A - Fan Motor M07, Diagnostic Schematic and Circuit Test and SE10B - Air-Conditioning System, Diagnostic Schematic and Circuit Test

Plug layout

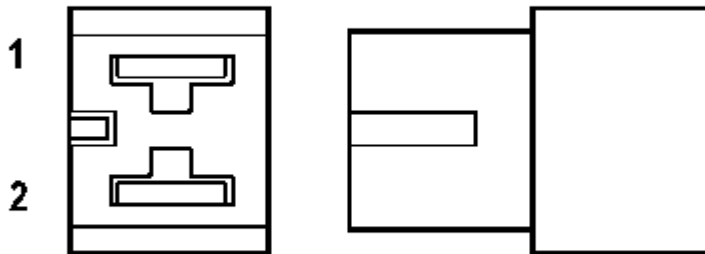
Plug layout	
Pin no.	Wire color
X56/1	orange
X56/2	black/green

X57/L - 2-Pin Interconnection between Wiring Harnesses W05 and W15



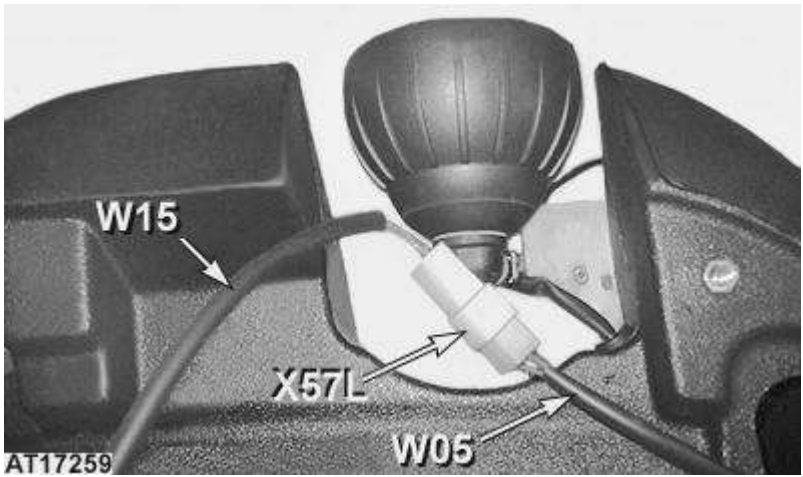
ATX57A

2-pin connector on wiring harness W15



ATX57B

2-pin connector on wiring harness W05



2-pin interconnection between wiring harnesses W05 and W15

LEGEND:

- W05 Cab wiring harness
- W15 Front wiper motor wiring harness
- X57/L 2-pin interconnection between wiring harnesses W05 and W15

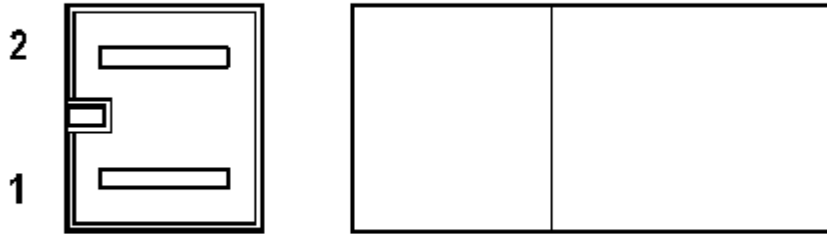
Component information

Component information	
Number of pins:	2
Connection Point:	W05 - Cab Wiring Harness and W15 - Front Wiper Motor Wiring Harness
Wiring harness:	W05 - Cab Wiring Harness and W15 - Front Wiper Motor Wiring Harness
Circuit:	SE11 - Wiper and Washer System, Diagnostic Schematic and Circuit Test

Plug layout

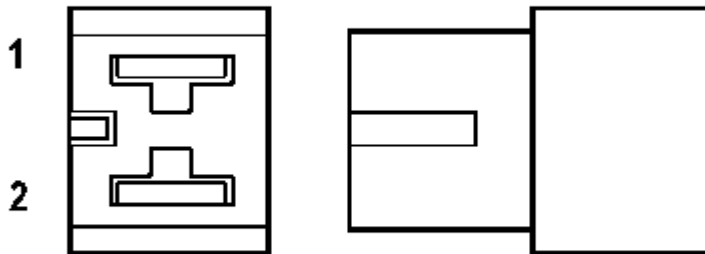
Plug layout	
Pin no.	Wire color
1	blue/black
2	blue

X57/R - 2-Pin Interconnection between Wiring Harnesses W05 and W15



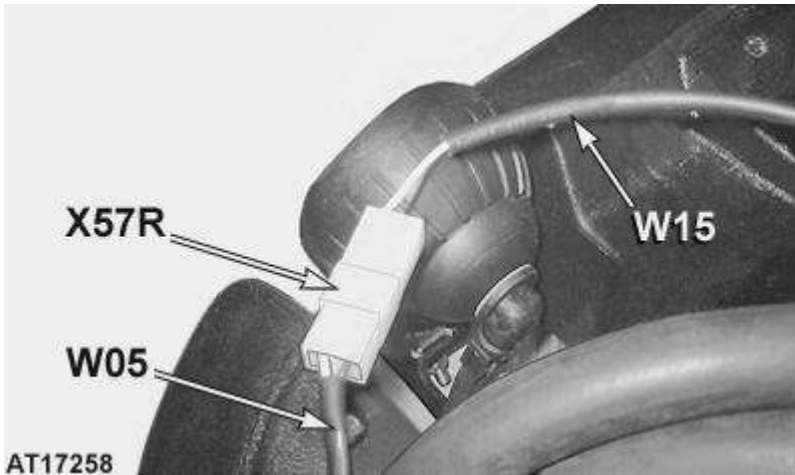
ATX57A

2-pin connector on wiring harness W15



ATX57B

2-pin connector on wiring harness W05



2-pin interconnection between wiring harnesses W05 and W15

LEGEND:

- W05 Cab wiring harness
- W15 Front wiper motor wiring harness
- X57/R 2-pin interconnection between wiring harnesses W05 and W15

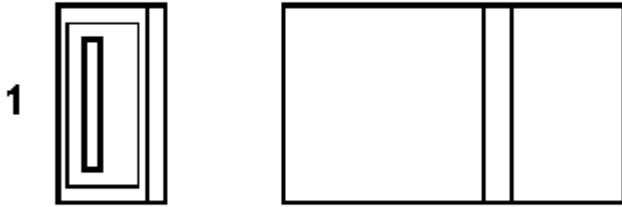
Component information

Component information	
Number of pins:	2
Connection Point:	W05 - Cab Wiring Harness and W15 - Front Wiper Motor Wiring Harness
Wiring harness:	W05 - Cab Wiring Harness and W15 - Front Wiper Motor Wiring Harness
Circuit:	SE11 - Wiper and Washer System, Diagnostic Schematic and Circuit Test

Plug layout

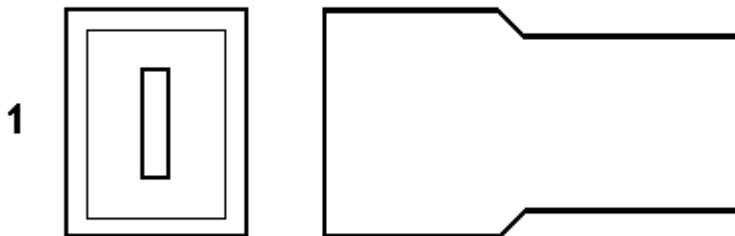
Plug layout	
Pin no.	Wire color
1	light blue/black
2	black

X81 - 1-Pin Interconnection between Wiring Harnesses W02 and W03 II



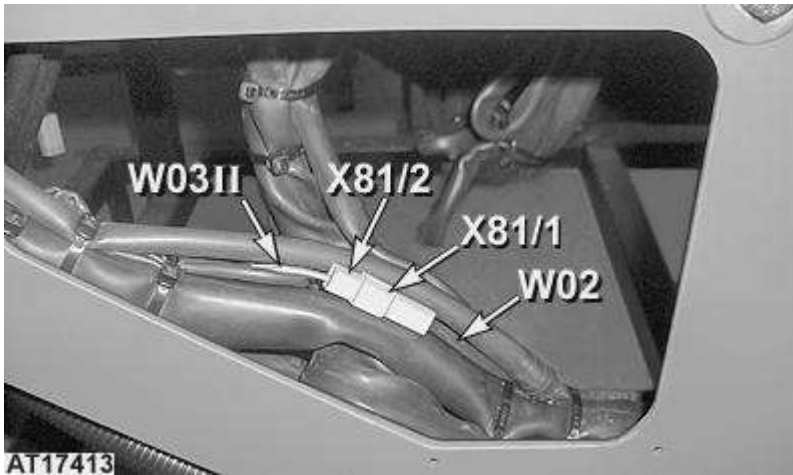
ATX811

1-pin connection on main wiring harness W02



ATX812

1-pin connector on EHM II wiring harness W03 II



1-pin interconnection between wiring harnesses W02 and W03 II

LEGEND:

- W02 Main wiring harness
- W03 II 24/12-speed transmission wiring harness (EHM II)
- X81/1 1-pin connection on main wiring harness W02
- X81/2 1-pin connector on EHM II wiring harness W03 II

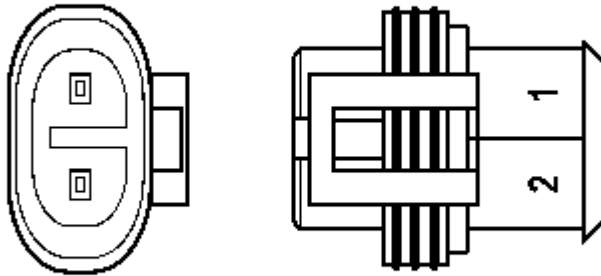
Component information

Component information	
Number of pins:	1
Connection Point:	W02 - Main Wiring Harness and W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)
Wiring harness:	W02 - Main Wiring Harness and W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)

Plug layout

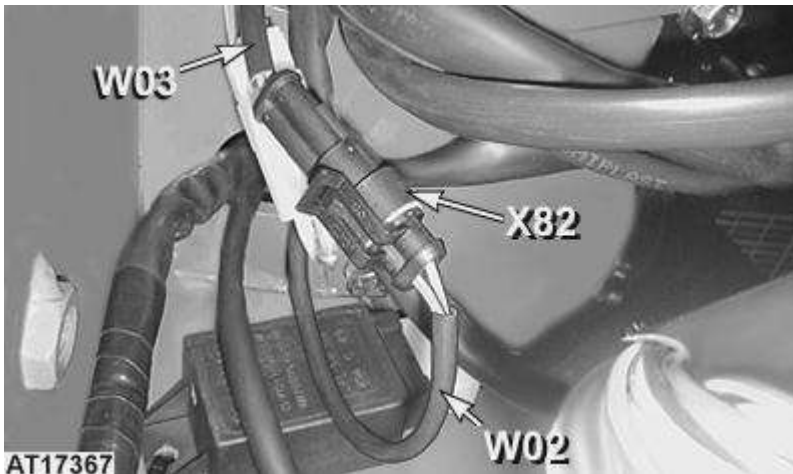
Plug layout	
Pin no.	Wire color
1	white/red

X82 - 2-Pin Interconnection between Wiring Harnesses W02 and W03 II



ATX82

2-pin interconnection between wiring harnesses W02 and W03 II



2-pin interconnection between wiring harnesses W02 and W03 II

LEGEND:

- W02 Main wiring harness
- W03 II 24/12-speed transmission wiring harness (EHM II)
- X82 2-pin interconnection between wiring harnesses W02 and W03 II

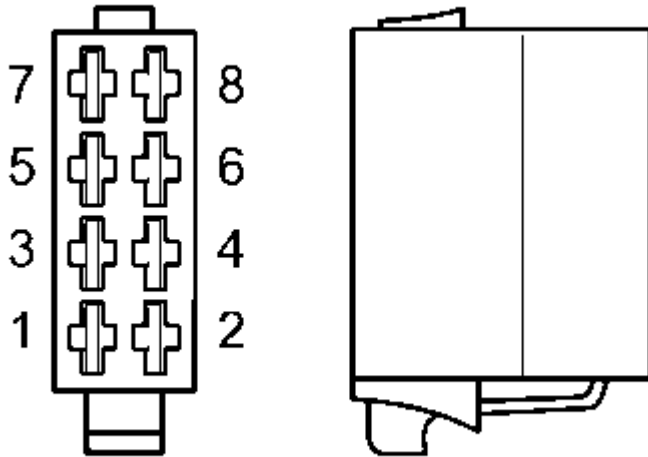
Component information

Component information	
Number of pins:	2
Wiring harness:	W02 - Main Wiring Harness and W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)

Plug layout

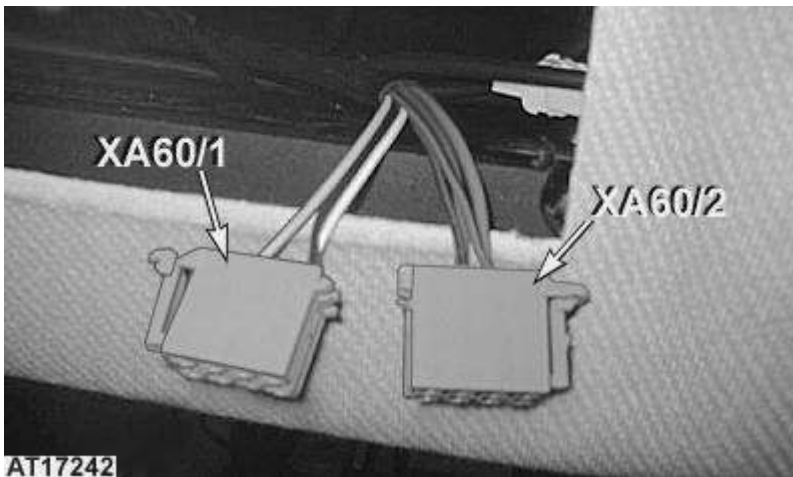
Plug layout	
Pin no.	Wire color
1	white/green (on W03 II - 24/12-speed wiring harness EHM II) white/green (on W02 - main wiring harness)
2	red (on W03 II - 24/12-speed wiring harness EHM II) red/green (on W02 - main wiring harness)

XA60 - 2/8-Pin Connectors for Radio A60



ATXA60

8-pin connector for radio



8-pin connectors for radio

LEGEND:

- XA60/1 8-pin connector for radio A60 (grey connector)
- XA60/2 8-pin connector for radio A60 (brown connector)

Component information

Component information	
Number of pins:	8
Connection Point:	A60 - Radio
Wiring harness:	W05 - Cab Wiring Harness
Circuit:	SE09A - Radio A60, Diagnostic Schematic and Circuit Test

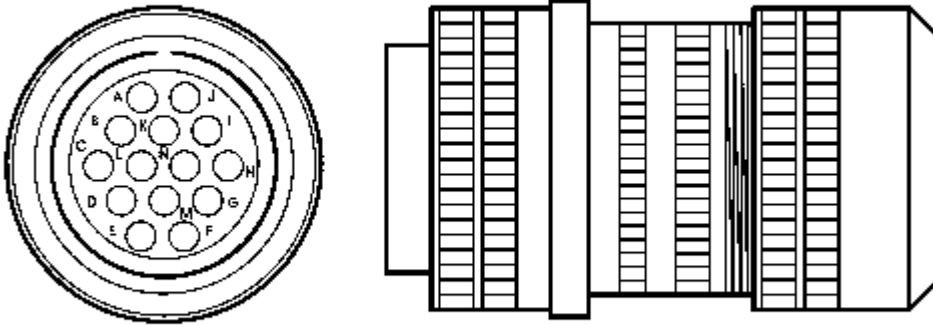
Plug layout

Plug layout of XA60/1 (grey connector)	
Pin no.	Wire color
1	—
2	—
3	—
4	yellow/red
5	—
6	—
7	white/red
8	black

Plug layout

Plug layout of XA60/2 (brown connector)	
Pin no.	Wire color
1	—
2	—
3	black/red
4	red
5	brown/black
6	brown
7	—
8	—

XA200 - Connector for EHS Control Panel A200



ATXA200

Connector for EHS control panel A200



Connector for EHS control panel A200

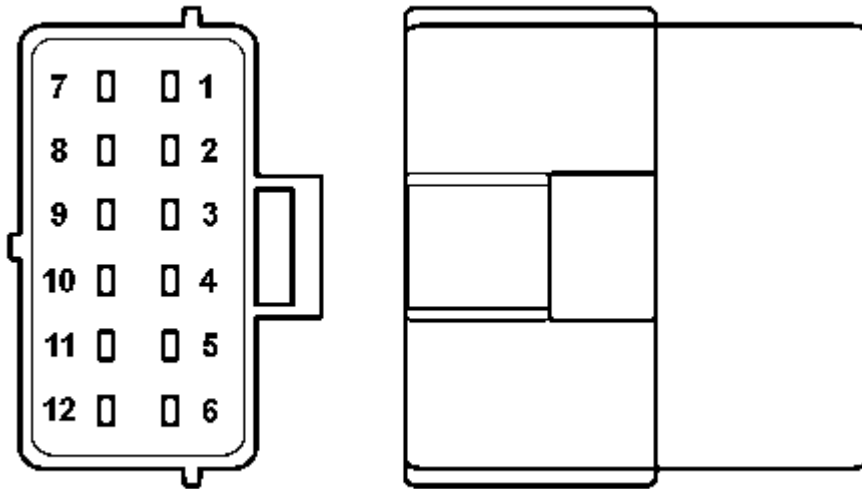
LEGEND:

- A200 EHS control panel
- XA200 Connector for EHS control panel A200

Component information

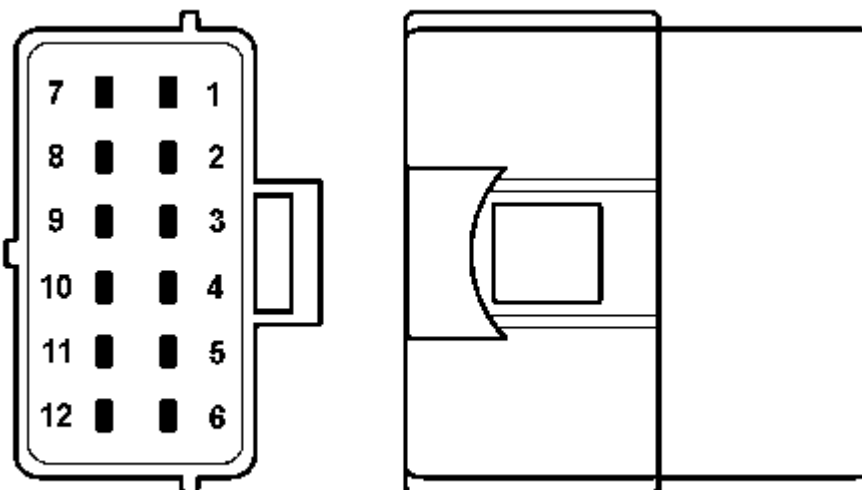
Component information	
Number of pins:	14
Connection Point:	A200 - EHS Control Panel
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS)
Circuit:	SE15 - Electronic Hitch Sensing (EHS) (Summary of References)

XA210 - 12-Pin Connector for EHS Control Panel A210



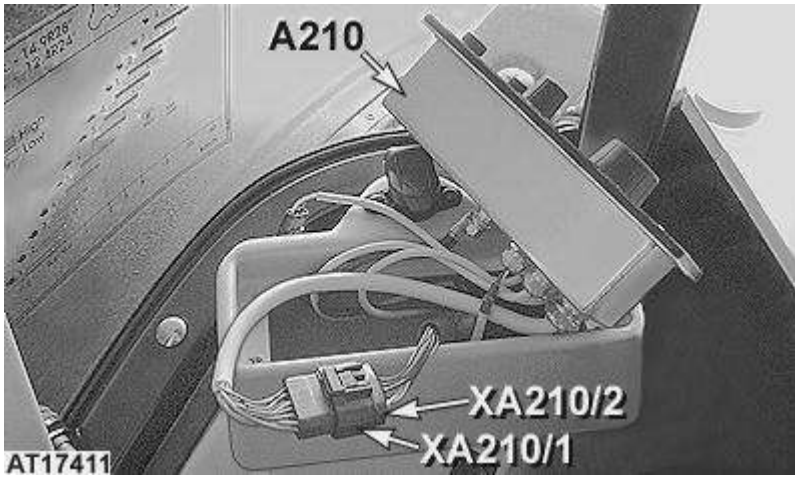
ATXA2101

XA210/1 - 12-pin connector on EHS II control panel A210



ATXA2102

XA210/2 - 12-pin connector on EHS II wiring harness W11 II



12-pin connector for EHS II control panel A210

LEGEND:

- A210 EHS II control panel
- XA210/1 12-pin connector on EHS II control panel A210
- XA210/2 12-pin connector on EHS II wiring harness W11 II

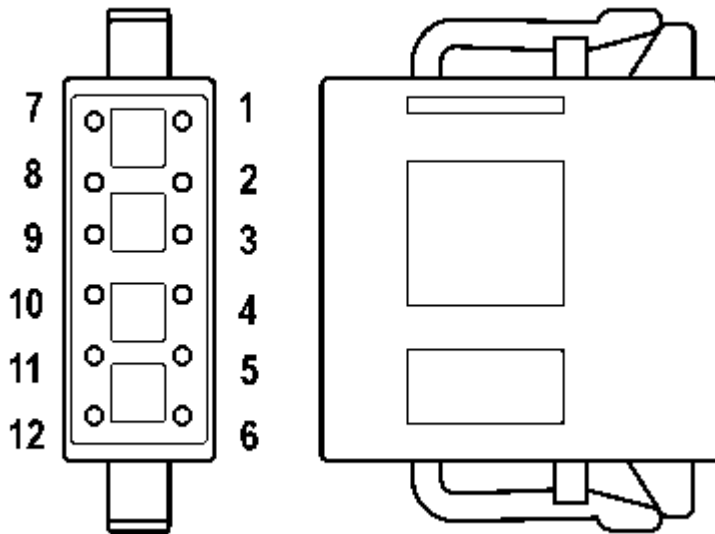
Component information

Component information	
Number of pins:	12
Connection Point:	A210 - EHS II Control Panel
Wiring harness:	W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15B - Electronic Hitch Sensing (EHS II) (Summary of References)

Plug layout

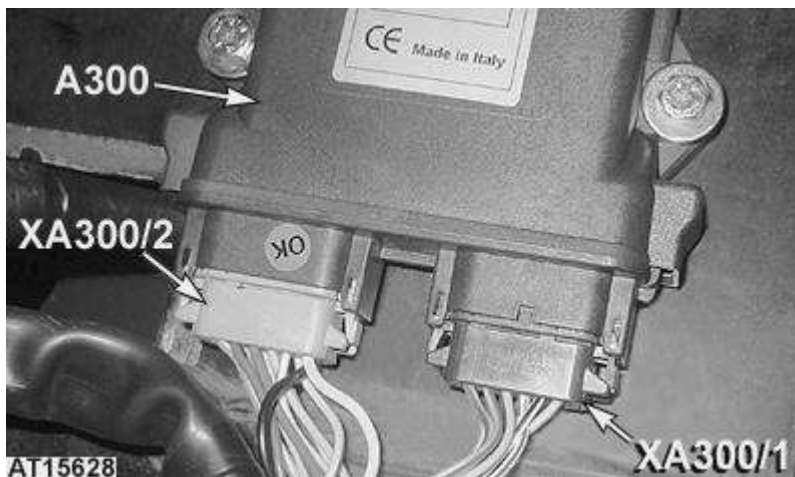
Plug layout		
Pin no.	Wire color on: EHS II control panel A210	Wire color on: W11 II - EHS II wiring harness
1	grey	yellow
2	blue	white
3	red	black
4	white	brown
5	brown	green
6	green	brown
7	yellow	brown
8	pink/grey	white
9	pink	brown
10	red/blue	white
11	violet	white
12	black	black

XA300/1 - 12-Pin Connector for EHM Control Unit A300



ATXA3001

12-pin connector for EHM control unit A300



12-pin connector for EHM control unit A300

LEGEND:

- A300 EHM control unit
- XA300/1 12-pin connector for EHM control unit A300 (black)
- XA300/2 12-pin connector for EHM control unit A300 (grey)

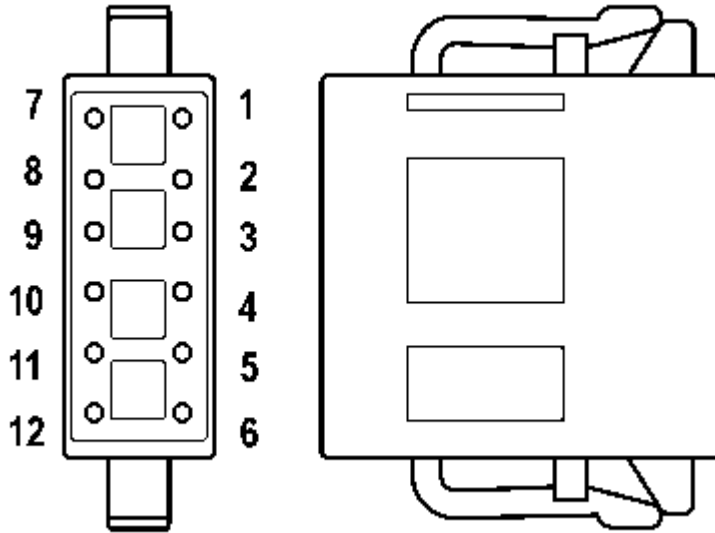
Component information

Component information	
Number of pins:	12
Connection Point:	A300 - EHM Control Panel
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness
Circuit:	SE26A - Electro-Hydraulic Management (EHM) (Summary of References)

Plug layout

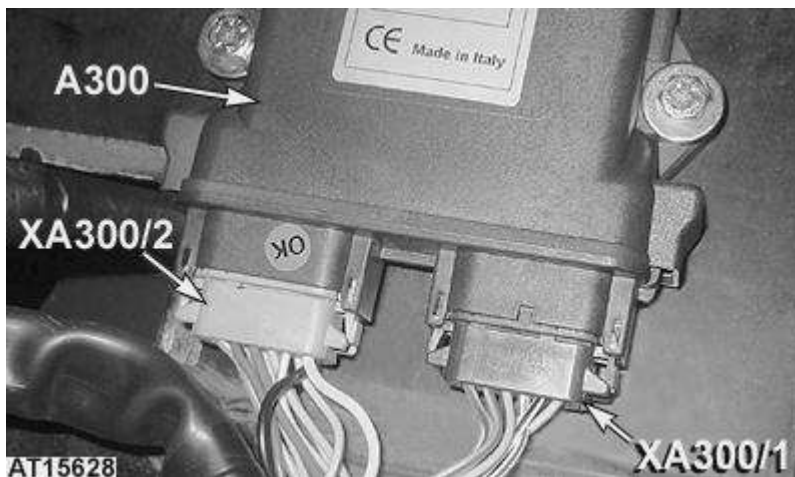
Plug layout	
Pin no.	Wire color
1	orange/green
2	pink/blue
3	orange/black
4	white/black
5	white/green
6	pink/green
7	violet/black
8	orange/yellow
9	violet/red
10	violet
11	blue/red
12	pink/blue

XA300/2 - 12-Pin Connector for EHM Control Unit A300



ATXA3002

12-pin connector for EHM control unit A300



12-pin connector for EHM control unit A300

LEGEND:

- A300 EHM control unit
- XA300/1 12-pin connector for EHM control unit A300 (black)
- XA300/2 - 12-pin connector for EHM control unit A300 (grey)

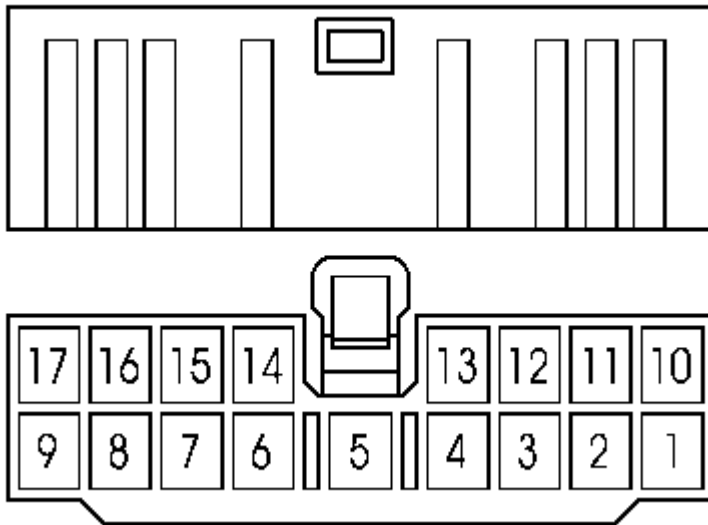
Component information

Component information	
Number of pins:	12
Connection Point:	A300 - EHM Control Unit
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness
Circuit:	SE26A - Electro-Hydraulic Management (EHM) (Summary of References)

Plug layout

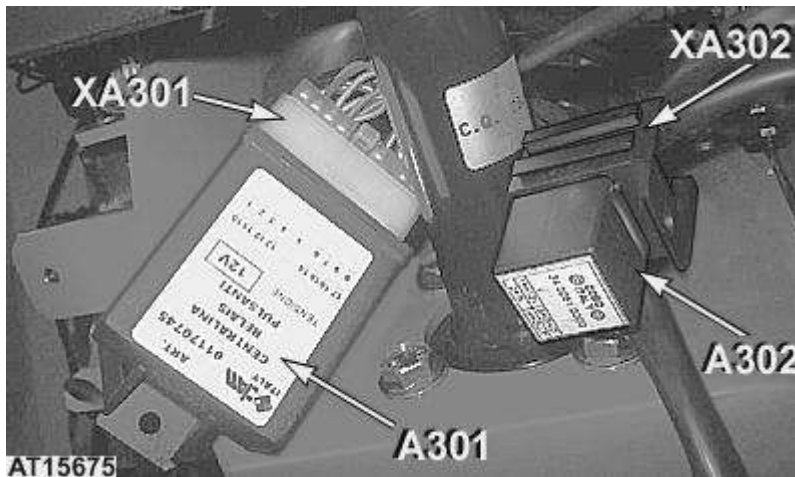
Plug layout	
Pin no.	Wire color
1	black
2	yellow/green
3	brown/yellow
4	orange/red
5	orange/blue
6	white/black
7	yellow/red
8	blue
9	brown
10	orange
11	brown/pink
12	white/red

XA301 - 17-Pin Connector for Relay Box A301 (EHM)



ATXA301

17-pin connector for relay box A301 (EHM)



17-pin connector for relay box A301 (EHM)

LEGEND:

- A301 Relay box of shut-off system (EHM)
- A302 Time-delay switch of shut-off system (EHM)
- XA301 17-pin connector for relay box A301 (EHM)
- XA302 5-pin connector for time-delay switch A302 (EHM)

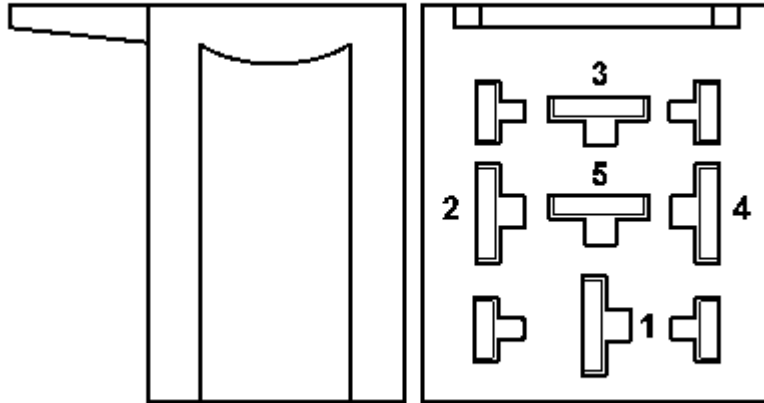
Component information

Component information	
Number of pins:	17
Connection Point:	A301 - Relay Box (EHM)
Wiring harness:	W12 - Shut-Off System Wiring Harness (EHM)
Circuit:	Wiring Diagram "M" - Shut-Off System Wiring Harness (EHM)

Plug layout

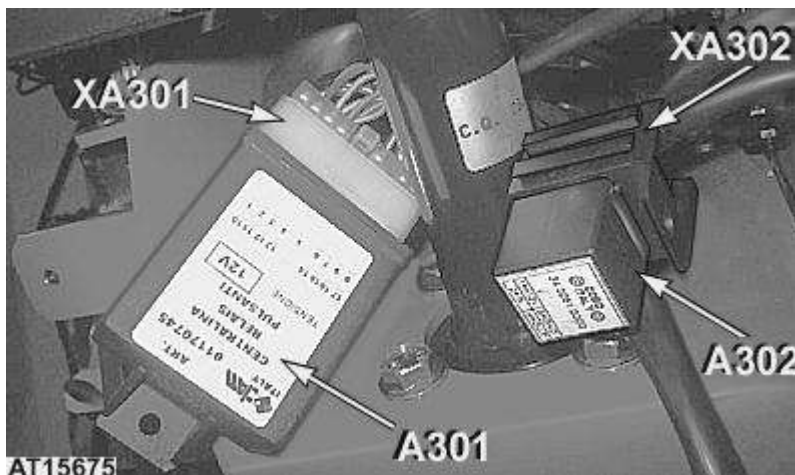
Plug layout	
Pin no.	Wire color
1	white/red
2	green
3	yellow
4	green
5	not used
6	black
7	white/red
8	yellow
9	green
10	black
11	blue
12	yellow
13	green
14	light blue/red
15	not used
16	blue/black
17	grey/black

XA302 - 5-Pin Connector for Time-Delay Switch A302 (EHM)



ATXA302

5-pin connector for time-delay switch A302 (EHM)



5-pin connector for relay box A301 (EHM)

LEGEND:

- A301 Relay box of shut-off system (EHM)
- A302 Time-delay switch of shut-off system (EHM)
- XA301 17-pin connector for relay box A301 (EHM)
- XA302 5-pin connector for time-delay switch A302 (EHM)

Component information

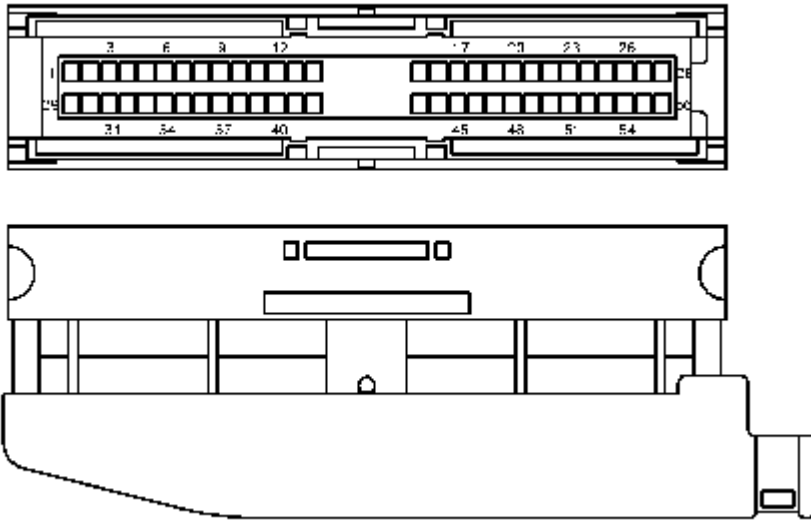
Component information	
Number of pins:	5
Connection Point:	A302 - Time-Delay Switch (EHM)
Wiring harness:	W12 - Shut-Off System Wiring Harness (EHM)

Component information	
Circuit:	Wiring Diagram "M" - Shut-Off System Wiring Harness (EHM)

Plug layout

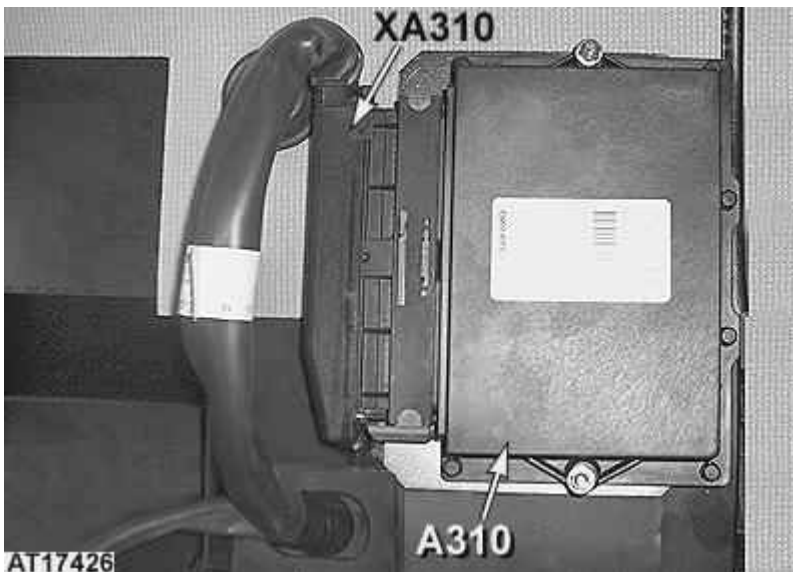
Plug layout	
Pin no.	Wire color
1	not used
2	blue/red, 1 lead light blue/yellow, 1 lead
3	black, 1 lead
4	blue, 1 lead yellow, 1 lead
5	not used

XA310 - 56-Pin Connector for EHM II Control Unit A310



ATXA310

56-pin connector for EHM II control unit A310



56-pin connector for EHM II control unit A310

LEGEND:

- A310 EHM II control unit
- XA310 56-pin connector for EHM II control unit A310

Component information

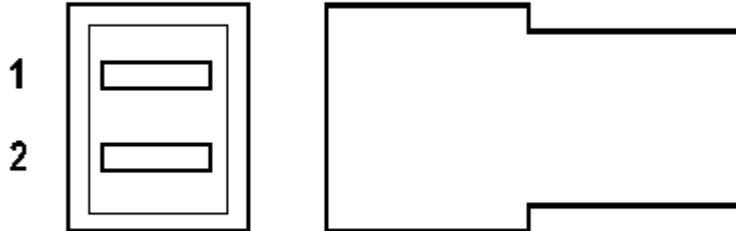
Component information	
Number of pins:	56
Connection Point:	A310 - EHM II Control Unit
Wiring harness:	W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)

Component information	
Circuit:	

Plug layout

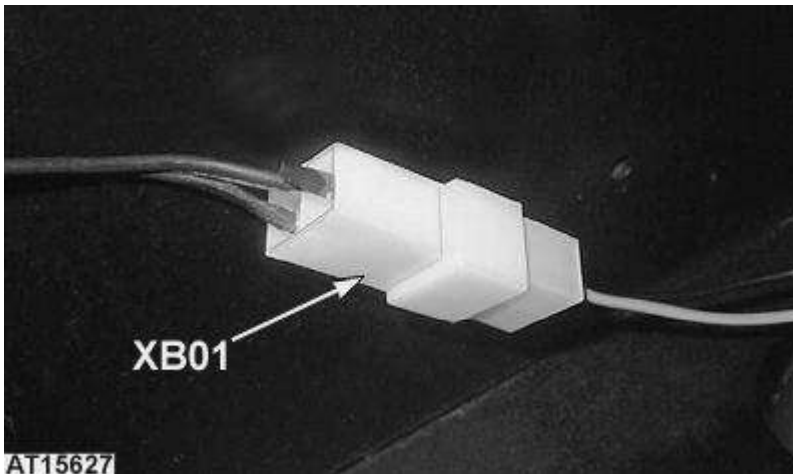
Plug layout			
Pin no.	Wire color	Pin no.	Wire color
1	red	29	black
2	blue/red	30	blue/red
3	orange/yellow	31	blue/red
4	not used	32	blue/red
5	blue/red	33	blue/red
6	violet/black	34	white/red
7	pink/green	35	white/red
8	white/red	36	white/red
9	light blue/red	37	not used
10	violet/red	38	not used
11	not used	39	blue/black
12	orange/black	40	not used
13	violet	41	pink/blue
14	light blue/red	42	brown/pink
15	orange/red	43	pink/yellow
16	orange	44	not used
17	black	45	not used
18	brown/yellow	46	blue
19	brown	47	orange/green
20	pink	48	violet/white
21	white/yellow	49	light blue/green
22	pink/white	50	grey/white
23	brown/white	51	yellow/red
24	not used	52	not used
25	grey/green	53	orange/blue
26	not used	54	not used
27	not used	55	not used
28	white/black	56	white/green

XB01 - 2-Pin Connector for Ambient Temperature Sensor B01 (EHM or EHM II)



ATXB01

2-pin connector for ambient temperature sensor B01 (EHM or EHM II)



2-pin connector for ambient temperature sensor B01 (EHM or EHM II)

LEGEND:

XB01 2-pin connector for ambient temperature sensor B01 (EHM or EHM II)

Component information

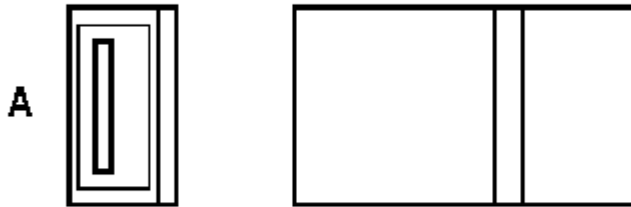
Component information	
Number of pins:	2
Connection Point:	B01 - Ambient Temperature Sensor (EHM or EHM II)
Wiring harness:	W03 II - 24/12-Speed Transmission Wiring Harness (EHM II) or Wiring Diagram "M" - Shut-Off System Wiring Harness (EHM)

Component information	
Circuit:	SE26A - Ambient Temperature Sensor (EHM), Diagnostic Schematic and Circuit Test or SE26B - Ambient Temperature Sensor (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

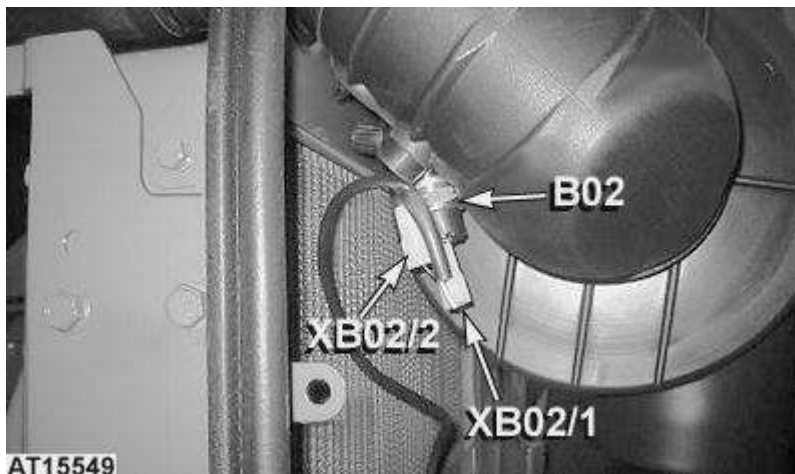
Plug layout	
Pin no.	Wire color
1	black
2	violet/green

XB02 - 2/1-Pin Connectors for Air Filter Restriction Sensor B02



ATXB02

1-pin connector for air filter restriction sensor B02

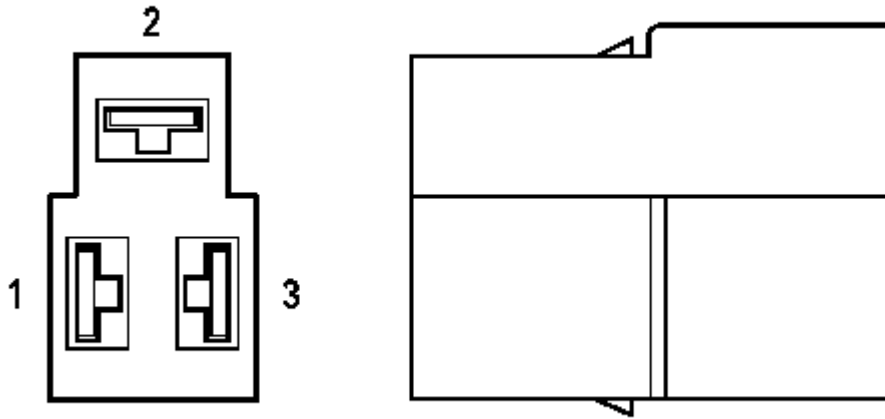


2/1-pin connectors for air filter restriction sensor B02

LEGEND:

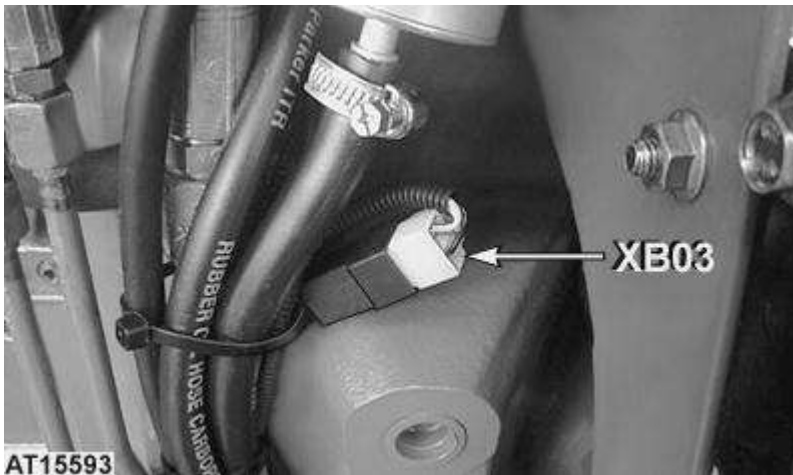
- XB02/1 1-pin connector for air filter restriction sensor B02 (pink/green lead)
- XB02/2 1-pin connector for air filter restriction sensor B02 (black lead)
- B02 Air filter restriction sensor

XB03 - 3-Pin Connector for Fuel Level Sensor B03



ATXB03

3-pin connector for fuel level sensor B03

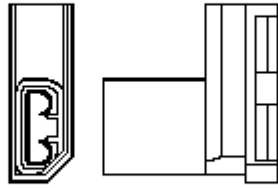


3-pin connector for fuel level sensor B03

LEGEND:

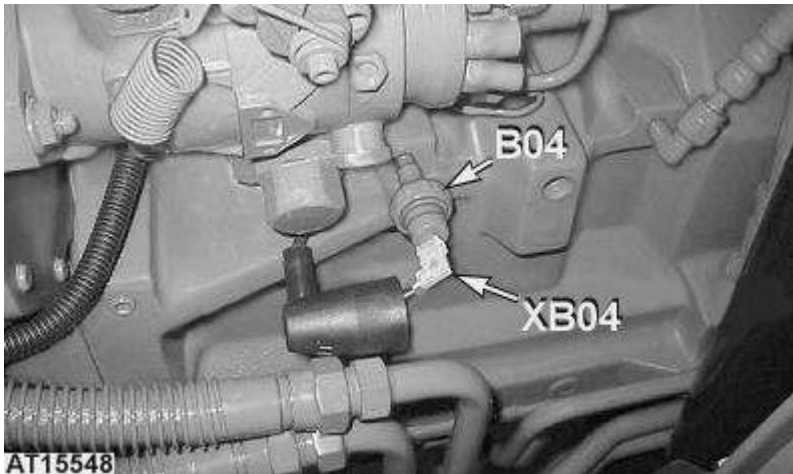
- 1 Black lead
- 2 Pink/white lead
- 3 Pink/yellow lead
- XB03 3-pin connector for fuel level sensor B03

XB04 - 1-Pin Connector for Engine Oil Pressure Switch B04



ATXB04

1-pin connector for engine oil pressure switch B04

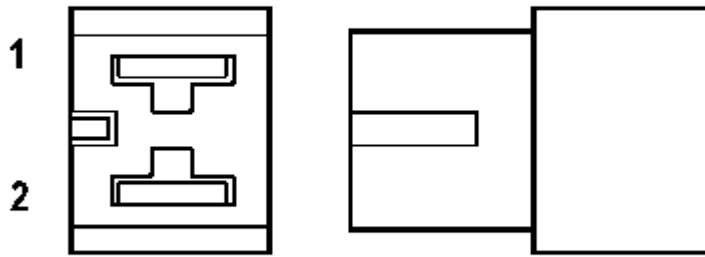


1-pin connector and engine oil pressure switch

LEGEND:

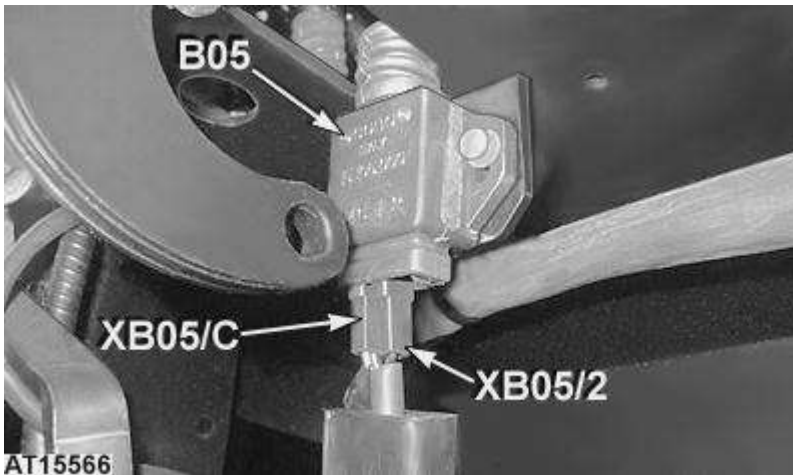
- B04 Engine oil pressure switch
- XB04 1-pin connector for engine oil pressure switch B04 (grey/red lead)

XB05 - 2/1-Pin Connectors for Parking Brake Switch B05



ATXB05

1-pin connector for parking brake switch B05

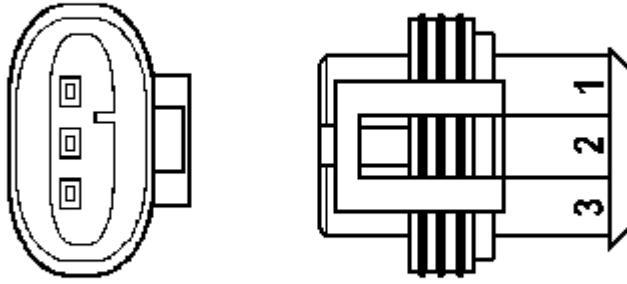


2/1-pin connectors for parking brake switch B05

LEGEND:

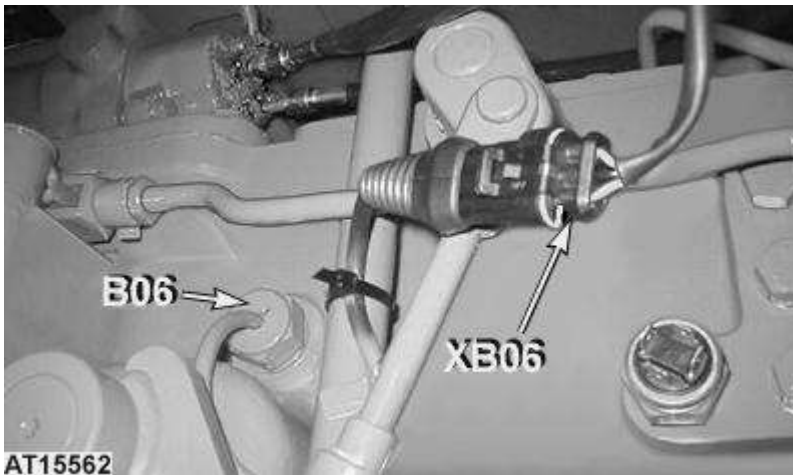
- B05 Parking brake switch
- XB05/2 1-pin connector for parking brake switch B05 (black lead)
- XB05/C 1-pin connector for parking brake switch B05 (orange/black lead)

XB06 - 3-Pin Connector for Transmission Speed Sensor B06



ATXB06

3-pin connector for transmission speed sensor B06

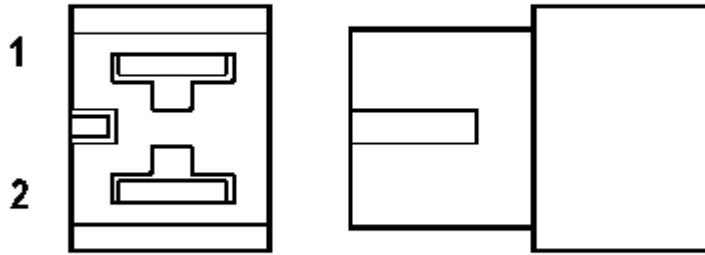


3-pin connector for transmission speed sensor B06

LEGEND:

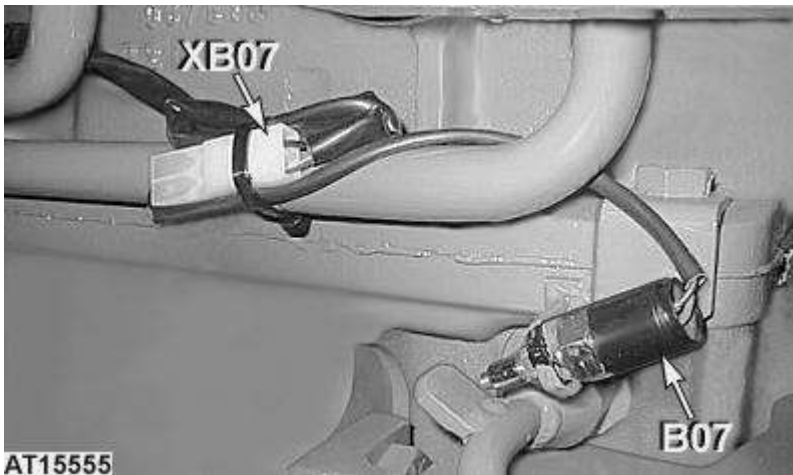
- 1 Orange/blue lead
- 2 Black lead
- 3 Orange lead
- B06 Transmission speed sensor
- XB06 3-pin connector for transmission speed sensor B06

XB07 - 2-Pin Connector for PTO Speed Selection Switch B07



ATXB07

2-pin connector for PTO speed selection switch B07

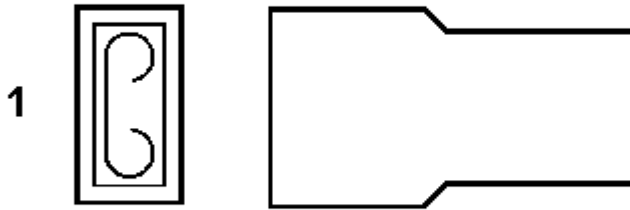


2-pin connector for PTO speed selection switch B07

LEGEND:

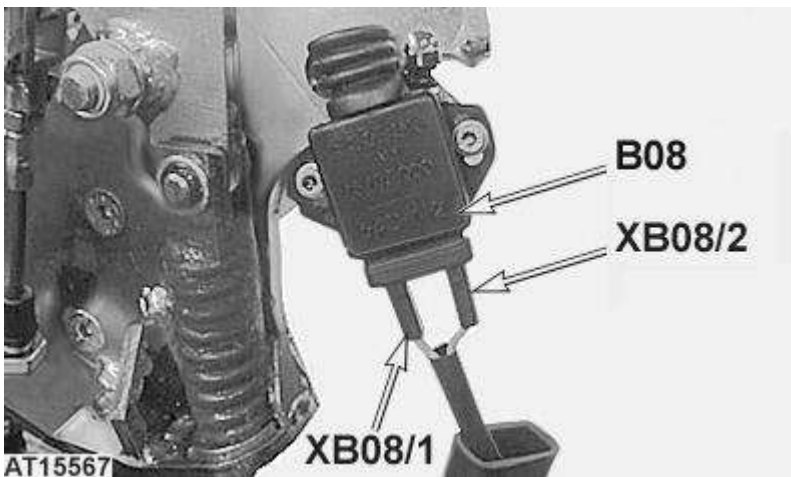
- 1 Blue/yellow lead
- 2 Black lead
- B07 PTO speed selection switch
- XB07 2-pin connector for PTO speed selection switch B07

XB08 - 2/1-Pin Connectors for PTO Safety Switch B08



ATXB08

1-pin connector for PTO safety switch B08

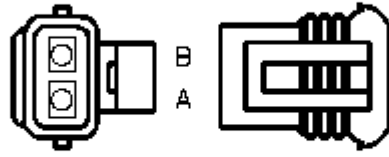


2/1-pin connectors for PTO safety switch B08

LEGEND:

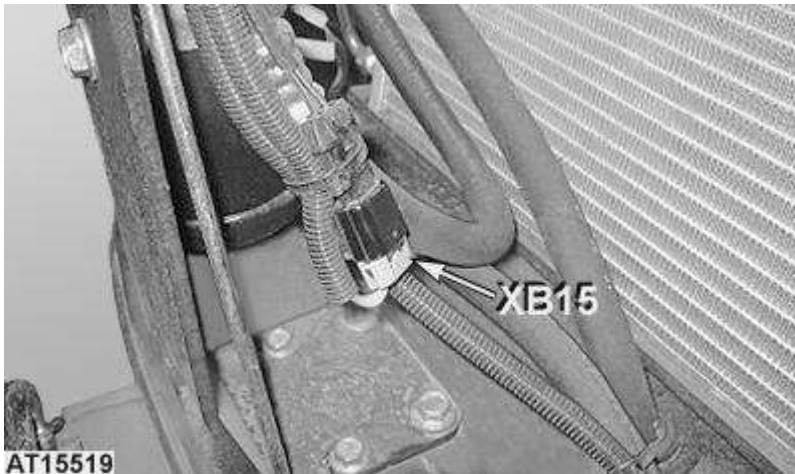
- XB08/1 1-pin connector for PTO safety switch B08 (white/grey lead)
- XB08/2 1-pin connector for PTO safety switch B08 (orange lead)
- B08 PTO safety switch

XB15 - 2-Pin Connector for Air-Conditioning Pressure Switch B15



ATXB15

XB15 - 2-pin connector for air-conditioning pressure switch B15



XB15 - 2-pin connector for air-conditioning pressure switch B15

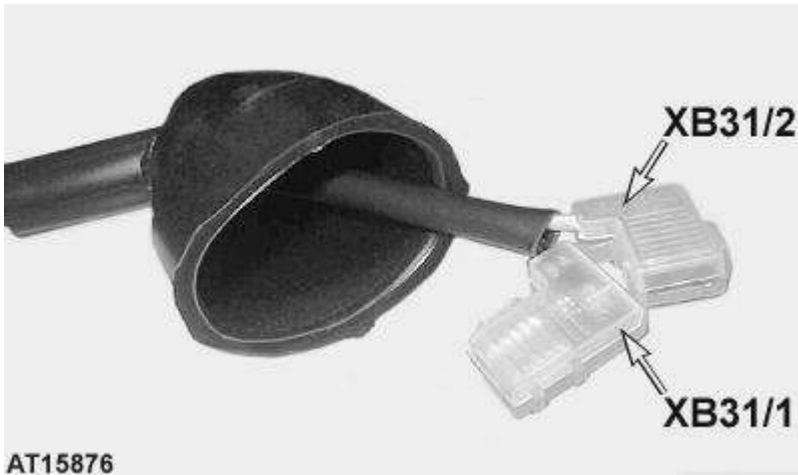
LEGEND:

A Yellow lead

B Yellow lead

XB15 2-pin connector for air-conditioning pressure switch B15

XB31 - 2/1-Pin Connectors for Trailer Brake Pressure Switch B31

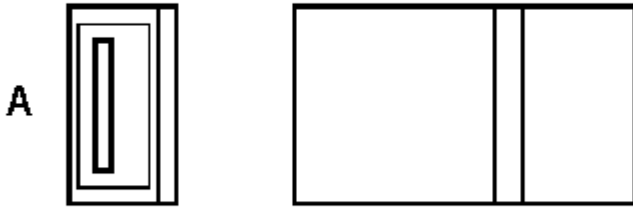


2/1-pin connectors for trailer brake pressure switch B31

LEGEND:

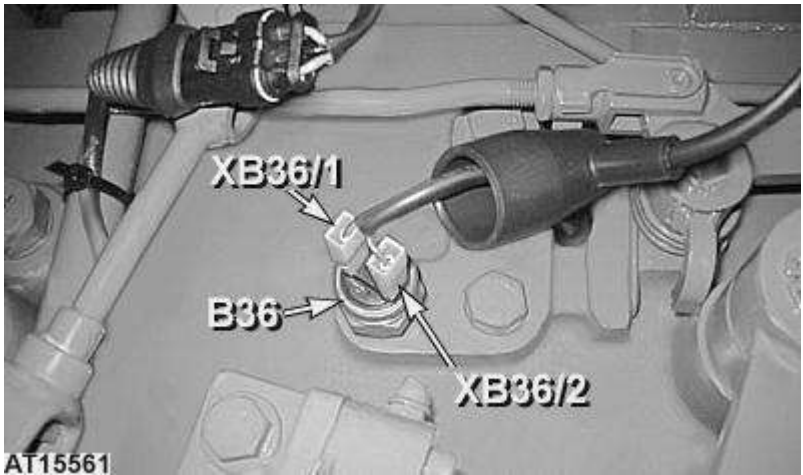
- XB31/1 1-pin connector for trailer brake pressure switch B31 (black lead)
- XB31/2 1-pin connector for trailer brake pressure switch B31 (pink/blue lead)

XB36 - 2/1-Pin Connectors for Neutral Start Switch B36



ATXB36

1-pin connector for neutral start switch B36

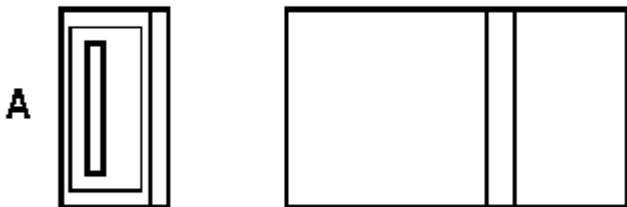


2/1-pin connectors for neutral start switch B36

LEGEND:

- XB36/1 1-pin connector for neutral start switch B36 (blue/black lead)
- XB36/2 1-pin connector for neutral start switch B36 (blue/black lead)
- B36 Neutral start switch

XB56/1 - 1-Pin Connector for Coolant Temperature Sensor B56/1 (3-Cyl. only)



ATXB561

XB56/1 - 1-pin connector for coolant temperature sensor B56/1 (3-cyl. only)



XB56/1 - 1-pin connector for coolant temperature sensor B56/1 (3-cyl. only)

LEGEND:

A Yellow/red lead

XB56/1 1-pin connector for coolant temperature sensor B56/1 (3-cyl. only)

XB56/2 - 2-Pin Connector for Coolant Temperature Sensor B56/2 (4-Cyl. only)



ATXB562

XB56/2 - 2-pin connector for coolant temperature sensor B56/2 (4-cyl. only)

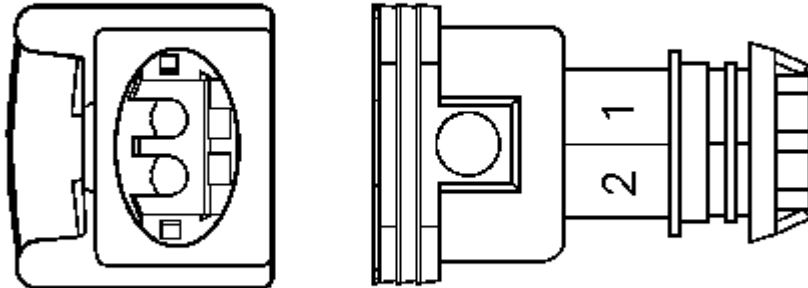


XB56/2 - 2-pin connector for coolant temperature sensor B56/2 (4-cyl. only)

LEGEND:

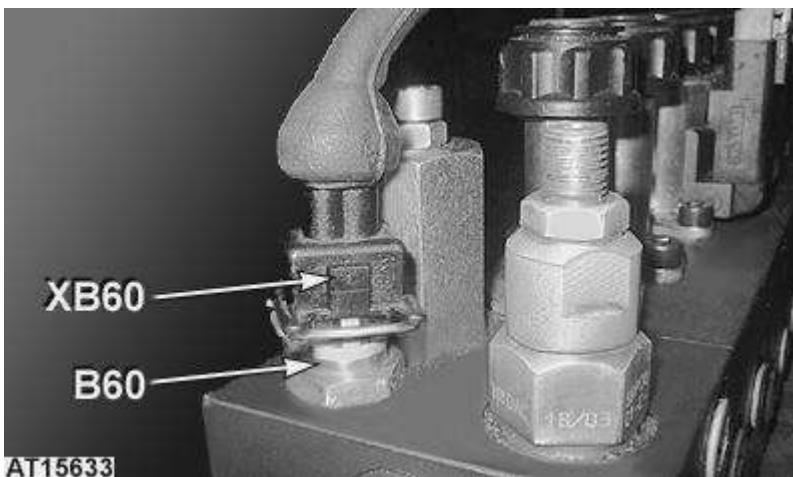
- A Yellow/red lead
- B Black lead
- XB56/2 2-pin connector for coolant temperature sensor B56/2 (4-cyl. only)

XB60 - 2-Pin Connector for Transmission Oil Temperature Sensor B60 (EHM or EHM II)



ATXB60

2-pin connector for transmission oil temperature sensor B60 (EHM or EHM II)



2-pin connector for transmission oil temperature sensor B60 (EHM or EHM II)

LEGEND:

- XB60 2-pin connector for transmission oil temperature sensor B60 (EHM or EHM II)
- B60 Transmission oil temperature sensor (EHM or EHM II)

Component information

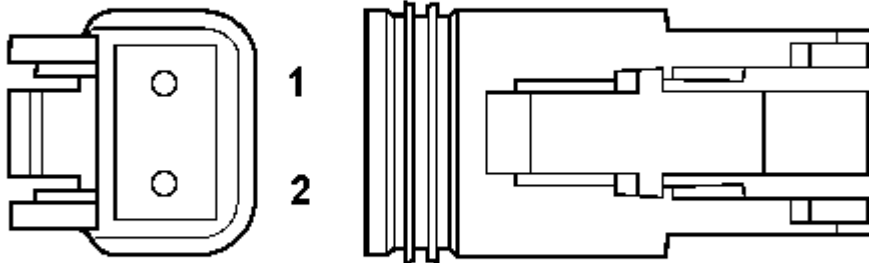
Component information	
Number of pins:	2
Connection Point:	B60 - Transmission Oil Temperature Sensor (EHM or EHM II)
Wiring harness:	W03 II - 24/12-Speed Transmission Wiring Harness (EHM II) or Wiring Diagram "M" - Shut-Off System Wiring Harness (EHM)

Component information	
Circuit:	SE26A - Transmission Oil Temperature Sensor and Calibration Switch (EHM), Diagnostic Schematic and Circuit Test or SE26B - Transmission Oil Temperature Sensor and Calibration Switch (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

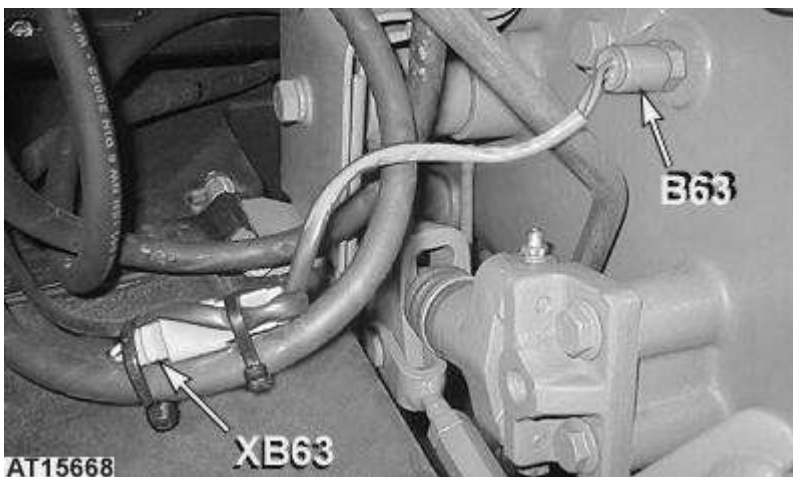
Plug layout	
Pin no.	Wire color
1	pink/yellow
2	black

XB63 - 2-Pin Connector for High Range/Low Range Switch B63 (EHM or EHM II)



ATXB63

2-pin connector for high range/low range switch B63 on transmission (EHM or EHM II)



2-pin connector for high range/low range switch B63 (EHM or EHM II)

LEGEND:

- XB63 2-pin connector for high range/low range switch B63 (EHM or EHM II)
- B63 High range/low range switch on transmission (EHM or EHM II)

Component information

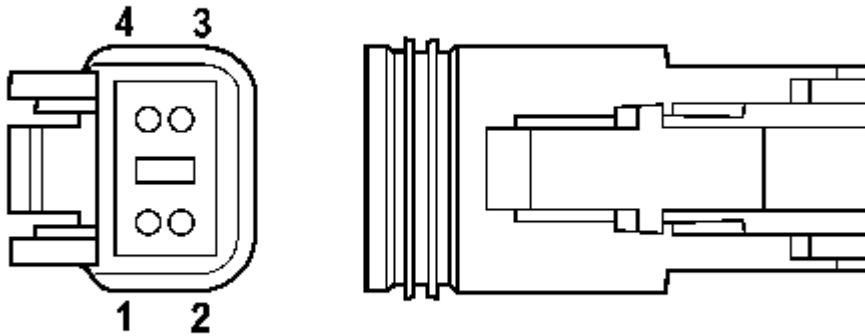
Component information	
Number of pins:	2
Connection Point:	B63 - High Range/Low Range Switch on Transmission (EHM or EHM II)
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness (EHM) or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)

Component information	
Circuit:	SE26A - High Range/Low Range Switch on Transmission (EHM), Diagnostic Schematic and Circuit Test or SE26B - High Range/Low Range Switch on Transmission (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

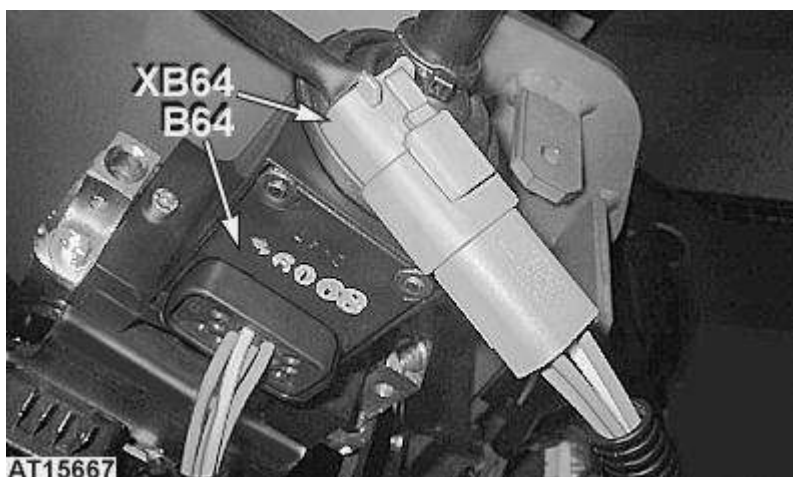
Plug layout		
Pin no.	Wire color on: EHS	Wire color on: EHS II
1	white/orange	pink
2	white/red	white/red

XB64 - 4-Pin Connector for Reverse Drive Lever Switch B64 (EHM or EHM II)



ATXB64

4-pin connector for reverse drive lever switch B64 (EHM or EHM II)



4-pin connector for reverse drive lever switch B64 (EHM or EHM II)

LEGEND:

- XB64 4-pin connector for reverse drive lever switch B64 (EHM or EHM II)
- B64 Reverse drive lever switch (EHM or EHM II)

Component information

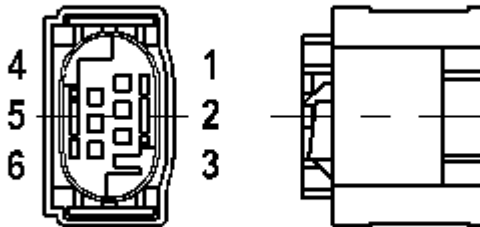
Component information	
Number of pins:	4
Connection Point:	B64 - Reverse Drive Lever Switch (EHM or EHM II)
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness (EHM) or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)

Component information	
Circuit:	SE26A - Reverse Drive Lever (EHM), Diagnostic Schematic and Circuit Test or SE26B - Reverse Drive Lever (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

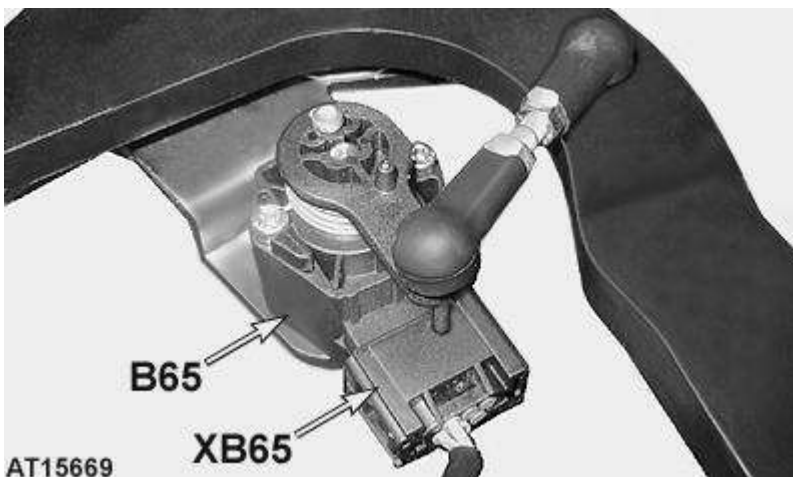
Plug layout	
Pin no.	Wire color
1	brown/blue
2	brown/yellow
3	blue
4	brown

XB65 - 6-Pin Connector for Clutch Pedal Potentiometer B65 (EHM or EHM II)



ATXB65

6-pin connector for clutch pedal potentiometer B65 (EHM or EHM II)



6-pin connector for clutch pedal potentiometer B65 (EHM or EHM II)

LEGEND:

- B65 Clutch pedal potentiometer (EHM or EHM II)
- XB65 6-pin connector for clutch pedal potentiometer B65 (EHM or EHM II)

Component information

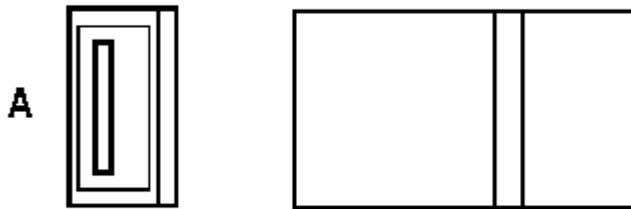
Component information	
Number of pins:	6
Connection Point:	B65 - Clutch Pedal Potentiometer (EHM or EHM II)
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness (EHM) or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)

Component information	
Circuit:	SE26A - Clutch Pedal Potentiometer (EHM), Diagnostic Schematic and Circuit Test or SE26B - Clutch Pedal Potentiometer (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

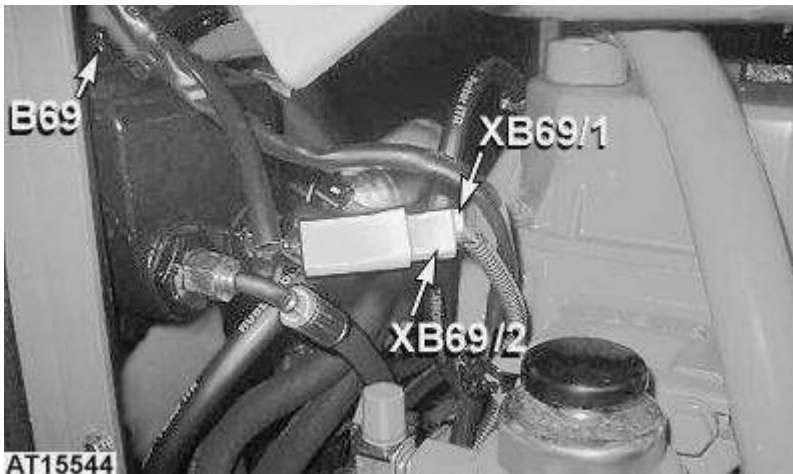
Plug layout		
Pin no.	Wire color on: EHM	Wire color on: EHM II
1	orange/red	orange/red
2	black	black
3	not used	not used
4	orange	orange
5	not used	not used
6	not used	not used

XB69 - 2/1-Pin Connectors for Brake Oil Level Sensor B69



ATXB69

1-pin connector for brake oil level sensor B69

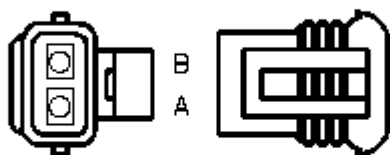


2/1-pin connectors for brake oil level sensor B69

LEGEND:

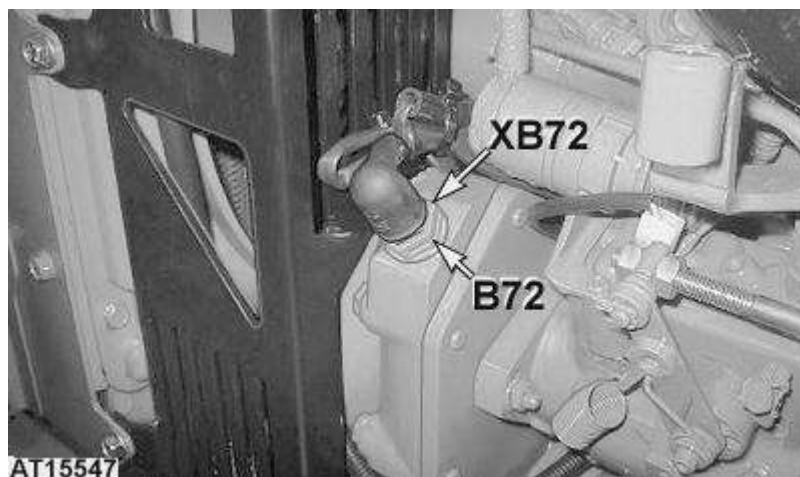
- XB69/1 1-pin connector for brake oil level sensor B69 (brown lead)
- XB69/2 1-pin connector for brake oil level sensor B69 (black lead)
- B69 Brake oil level sensor

XB72 - 2-Pin Connector for Engine Speed Sensor B72



ATXB72

2-pin connector for engine speed sensor B72

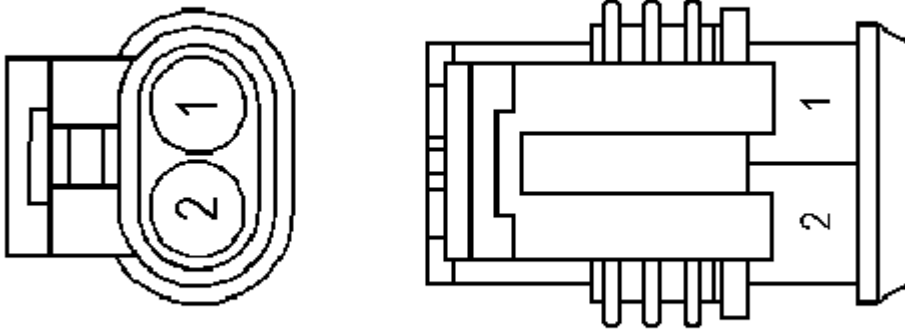


Engine speed sensor B72

LEGEND:

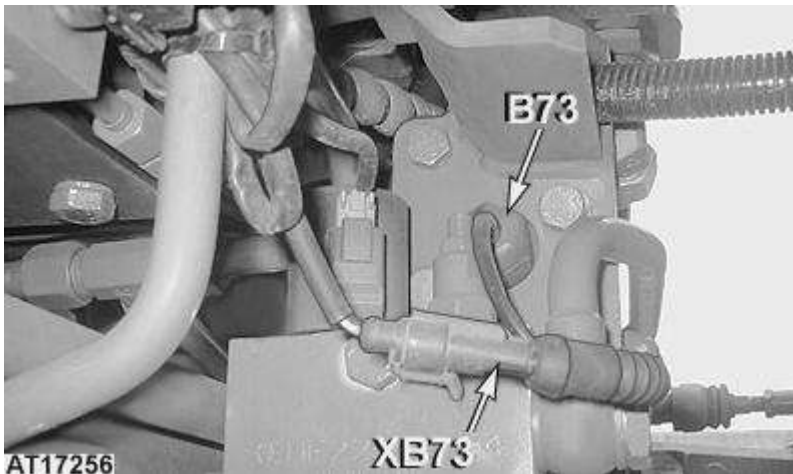
- A White/green lead
- B Black lead
- XB72 2-pin connector for engine speed sensor B72
- B72 Engine speed sensor

XB73 - 2-Pin Connector for Oil Filter Restriction Sensor B73 (EHM or EHM II)



ATXB732

2-pin connector for oil filter restriction sensor B73 (EHM or EHM II)



2-pin connector for oil filter restriction sensor B73 (EHM or EHM II)

LEGEND:

- B73 Oil filter restriction sensor (EHM or EHM II)
- XB73 2-pin connector for oil filter restriction sensor B73 (EHM or EHM II)

Component information

Component information	
Number of pins:	2
Connection Point:	B73 - Oil Filter Restriction Sensor (EHM or EHM II)
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness (EHM) or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)

Component information	
Circuit:	SE26A - Warning Light and Oil Filter Restriction Sensor (EHM), Diagnostic Schematic and Circuit Test or SE26B - Warning Light and Oil Filter Restriction Sensor (EHM II), Diagnostic Schematic and Circuit Test

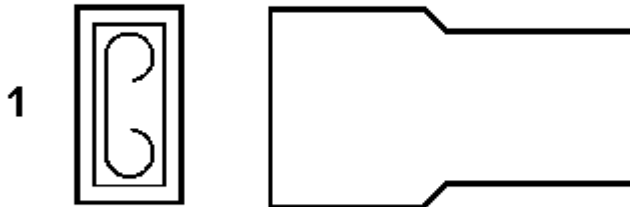
Plug layout

Plug layout EHM	
Pin no.	Wire color
1	light blue (from H50)
2	black

Plug layout

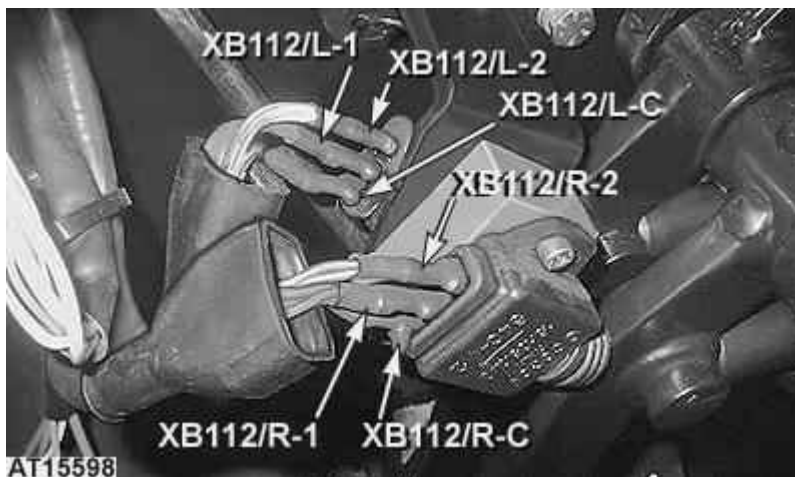
Plug layout EHM II	
Pin no.	Wire color
1	white/red
2	light blue/green

XB112 - 3/1-Pin Connectors for Brake Pedal Switches B112



ATXB112

1-pin connector for brake pedal switches B112

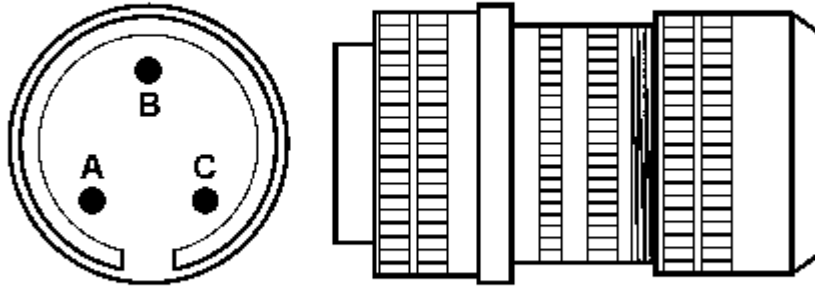


3/1-pin connectors for brake pedal switches B112

LEGEND:

- XB112/L-1** 1-pin connector for l.h. brake pedal switch B112/L (red lead)
- XB112/L-2** 1-pin connector for l.h. brake pedal switch B112/L (white/red lead)
- XB112/L-C** 1-pin connector for l.h. brake pedal switch B112/L (brown/black lead)
- XB112/R-1** 1-pin connector for r.h. brake pedal switch B112/R (red lead)
- XB112/R-2** 1-pin connector for r.h. brake pedal switch B112/R (white/red lead)
- XB112/R-C** 1-pin connector for r.h. brake pedal switch B112/R (brown/black lead)

XB200 - 3-Pin Connector for Position Sensor B200 (EHS)



ATXB200

3-pin connector for position sensor B200 (EHS)



3-pin connector for position sensor B200 (EHS)

LEGEND:

XB200 3-pin connector for position sensor B200 (EHS)

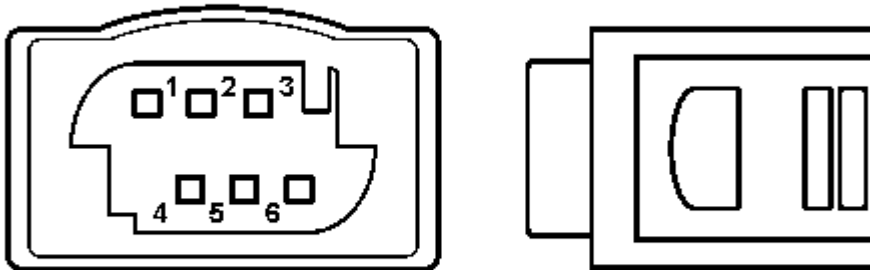
Component information

Component information	
Number of pins:	3
Connection Point:	B200 - Position Sensor (EHS)
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS)
Circuit:	SE15A - Position Sensor B200 (EHS), Diagnostic Schematic and Circuit Test

Plug layout

Plug layout	
Pin no.	Wire color
A	blue
B	brown
C	white

XB200 II - 6-Pin Connector for Position Sensor B200 II (EHS II)



ATXB200II

6-pin connector for position sensor B200 II (EHS II)



6-pin connector for position sensor B200 II (EHS II)

LEGEND:

- B200 II Position sensor (EHS II)
- XB200 II 6-pin connector for position sensor B200 II (EHS II)

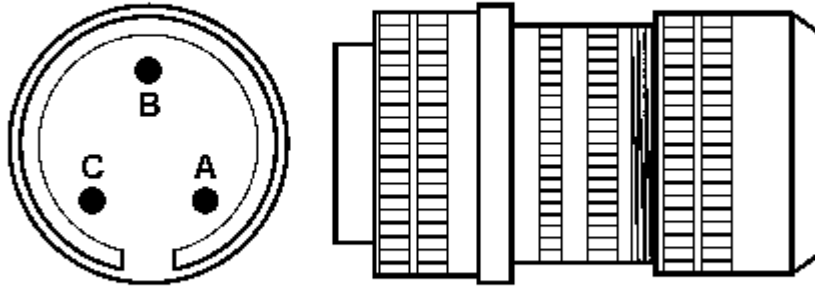
Component information

Component information	
Number of pins:	6
Connection Point:	B200 II - Position Sensor (EHS II)
Wiring harness:	W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15B - Position Sensor B200 II (EHS II), Diagnostic Schematic and Circuit Test

Plug layout

Plug layout	
Pin no.	Wire color
1	brown
2	green
3	not used
4	white
5	not used
6	not used

XB201 - 3-Pin Connector for Draft Sensor B201 (EHS)



ATXB201

3-pin connector for draft sensor B201 (EHS)



3-pin connector for draft sensor B201 (EHS)

LEGEND:

XB201 3-pin connector for draft sensor B201 (EHS)

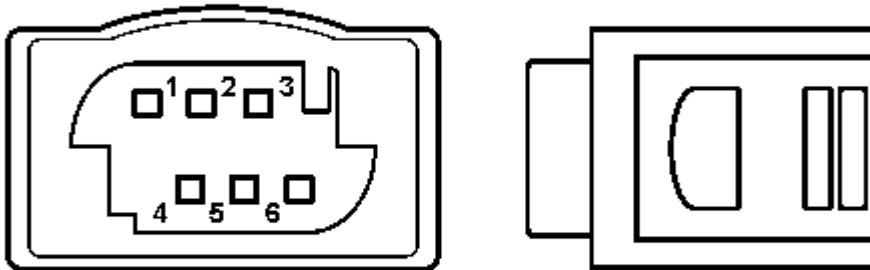
Component information

Component information	
Number of pins:	3
Connection Point:	B201 - Draft Sensor (EHS)
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS)
Circuit:	SE15A - Draft Sensor B201 (EHS), Diagnostic Schematic and Circuit Test

Plug layout

Plug layout	
Pin no.	Wire color
A	brown
B	black
C	blue

XB201 II - 6-Pin Connector for Draft Sensor B201 II (EHS II)



ATXB201II

6-pin connector for draft sensor B201 II (EHS II)



6-pin connector for draft sensor B201 II (EHS II)

LEGEND:

- B201 II Draft sensor (EHS II)
- XB201 II 6-pin connector for draft sensor B201 II (EHS II)

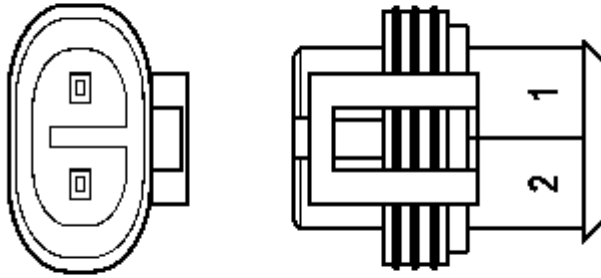
Component information

Component information	
Number of pins:	6
Connection Point:	B201 II - Draft Sensor (EHS II)
Wiring harness:	W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15B - Draft Sensor B201 II (EHS II), Diagnostic Schematic and Circuit Test

Plug layout

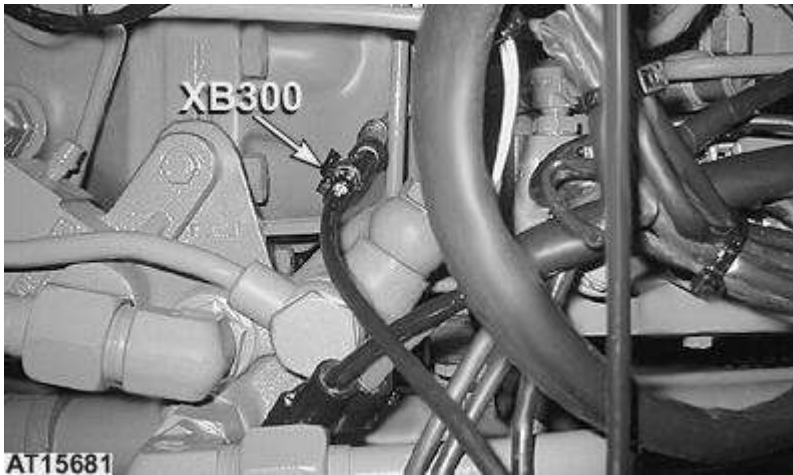
Plug layout	
Pin no.	Wire color
1	brown
2	white
3	not used
4	green
5	not used
6	not used

XB300 - 2-Pin Connector for Transmission Oil Pressure Sensor B300 of High Clutch (EHM or EHM II)



ATXB300

2-pin connector for transmission oil pressure sensor of forward high clutch (EHM or EHM II)



2-pin connector for transmission oil pressure sensor (EHM or EHM II)

LEGEND:

XB300 2-pin connector for transmission oil pressure sensor B300 of forward high clutch (EHM or EHM II)

Component information

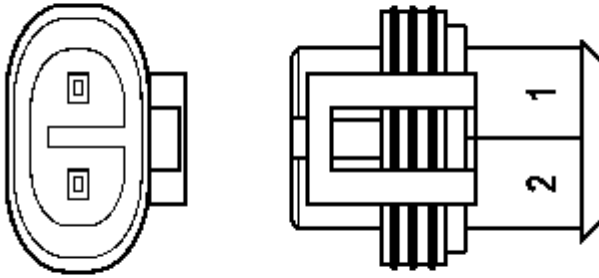
Component information	
Number of pins:	2
Connection Point:	B300 - Transmission Oil Pressure Sensor of Forward High Clutch (EHM or EHM II)

Component information	
Wiring harness:	W03 II - 24/12-Speed Transmission Wiring Harness (EHM II) or W12 - Shut-Off System Wiring Harness (EHM)
Circuit:	SE26A - Transmission Oil Pressure Sensors of Shut-Off System (EHM), Diagnostic Schematic and Circuit Test or SE26B - Transmission Oil Pressure Sensors (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

Plug layout	
Pin no.	Wire color
1	white/red
2	orange

XB301 - 2-Pin Connector for Transmission Oil Pressure Sensor B301 of Low Clutch (EHM or EHM II)



ATXB301

2-pin connector for transmission oil pressure sensor (EHM or EHM II)



2-pin connector for transmission oil pressure sensor (EHM or EHM II)

LEGEND:

- XB301 2-pin connector for transmission oil pressure sensor B301 of forward low clutch (EHM or EHM II)
- XB302 2-pin connector for transmission oil pressure sensor B302 of reverse clutch (EHM or EHM II)

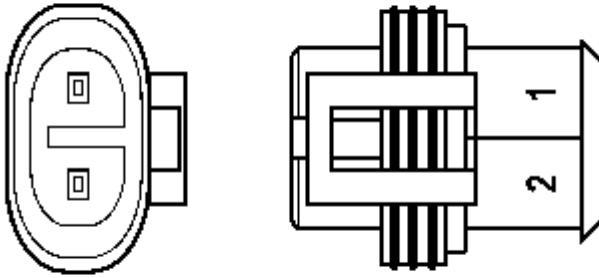
Component information

Component information	
Number of pins:	2
Connection Point:	B301 - Transmission Oil Pressure Sensor of Forward Low Clutch (EHM or EHM II)
Wiring harness:	W03 II - 24/12-Speed Transmission Wiring Harness (EHM II) or W12 - Shut-Off System Wiring Harness (EHM)
Circuit:	SE26A - Transmission Oil Pressure Sensors of Shut-Off System (EHM), Diagnostic Schematic and Circuit Test or SE26B - Transmission Oil Pressure Sensors (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

Plug layout	
Pin no.	Wire color
1	orange
2	orange/blue

XB302 - 2-Pin Connector for Transmission Oil Pressure Sensor B302 of Reverse Clutch (EHM or EHM II)



ATXB301

2-pin connector for transmission oil pressure sensor (EHM or EHM II)



2-pin connector for transmission oil pressure sensor (EHM or EHM II)

LEGEND:

- XB301 2-pin connector for transmission oil pressure sensor B301 of low clutch (EHM or EHM II)
- XB302 2-pin connector for transmission oil pressure sensor B302 of reverse clutch (EHM or EHM II)

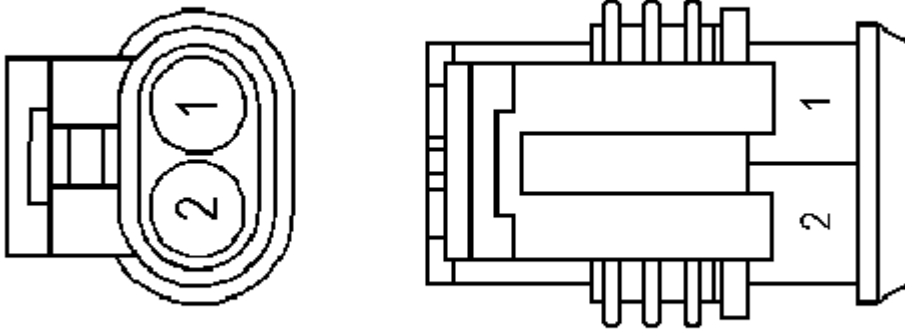
Component information

Component information	
Number of pins:	2
Connection Point:	B302 - Transmission Oil Pressure Sensor of Reverse Clutch (EHM or EHM II)
Wiring harness:	W03 II - 24/12-Speed Transmission Wiring Harness (EHM II) or W12 - Shut-Off System Wiring Harness (EHM)
Circuit:	SE26A - Transmission Oil Pressure Sensors of Shut-Off System (EHM), Diagnostic Schematic and Circuit Test or SE26B - Transmission Oil Pressure Sensors (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

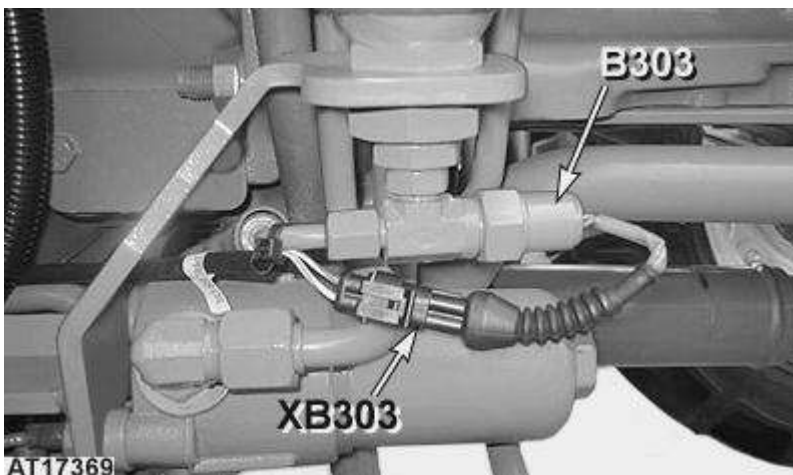
Plug layout	
Pin no.	Wire color
1	orange/blue
2	light blue/yellow

XB303 - 2-Pin Connector for EHM II System Pressure Sensor B303



ATXB303

2-pin connector for EHM II system pressure sensor B303



2-pin connector for EHM II system pressure sensor B303

LEGEND:

- B303 EHM II system pressure sensor
- XB303 2-pin connector for EHM II system pressure sensor B303

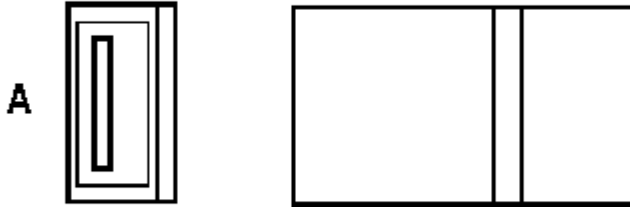
Component information

Component information	
Number of pins:	2
Connection Point:	B303 - EHM II System Pressure Sensor
Wiring harness:	W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)
Circuit:	SE26B - EHM II System Pressure Sensor, Diagnostic Schematic and Circuit Test

Plug layout

Plug layout	
Pin no.	Wire color
1	blue/black
2	white/red

XE01 - 3/1-Pin Connectors for r.h. H4 Headlight E01



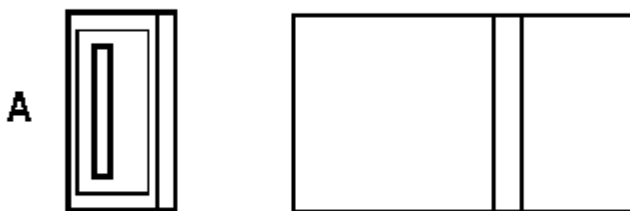
ATXE01

1-pin connector for r.h. H4 headlight E01

LEGEND:

- XE01/1 1-pin connector for r.h. H4 headlight E01 (grey lead)
- XE01/2 1-pin connector for r.h. H4 headlight E01 (green lead)
- XE01/3 1-pin connector for r.h. H4 headlight E01 (black lead)

XE02 - 3/1-Pin Connectors for l.h. H4 Headlight E02



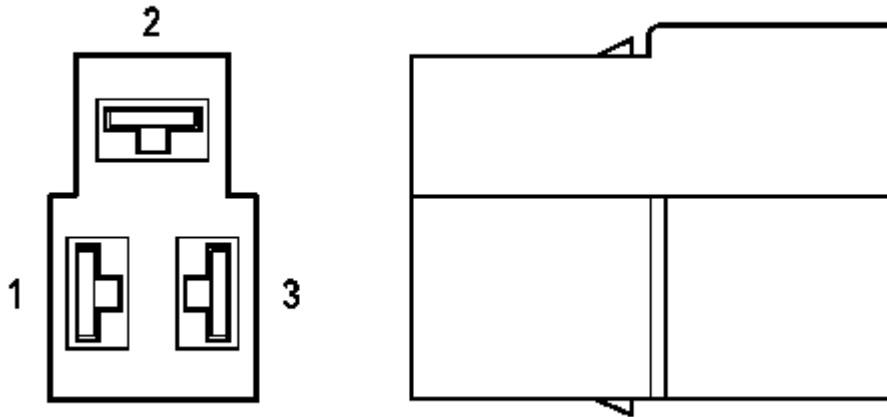
ATXE02

1-pin connector for l.h. H4 headlight E02

LEGEND:

- XE02/1 1-pin connector for l.h. H4 headlight E02 (grey lead)
- XE02/2 1-pin connector for l.h. H4 headlight E02 (green lead)
- XE02/3 1-pin connector for l.h. H4 headlight E02 (black lead)

XE07 - 3-Pin Connector for l.h. H4 Farm Headlight E07



ATXE07

3-pin connector for l.h. H4 farm headlight E07

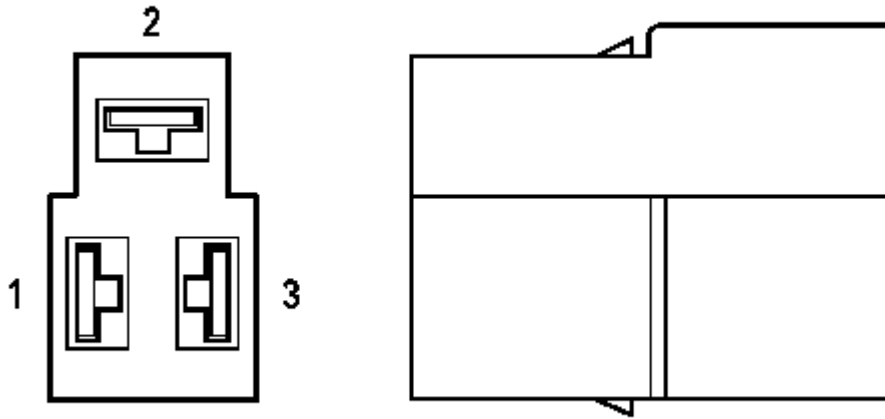


3-pin connector for l.h. H4 farm headlight E07

LEGEND:

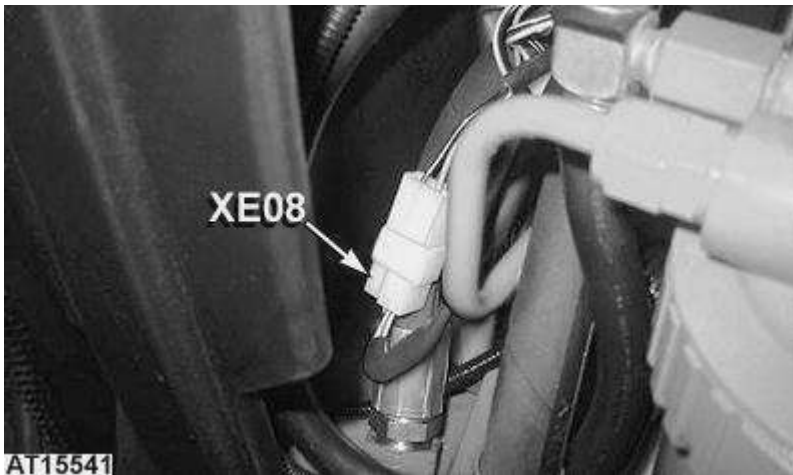
- 1 Grey/black lead
- 2 Black lead
- 3 Green/black lead
- XE07 3-pin connector for l.h. H4 farm headlight E07

XE08 - 3-Pin Connector for r.h. H4 Farm Headlight E08



ATXE08

3-pin connector for r.h. H4 farm headlight E08

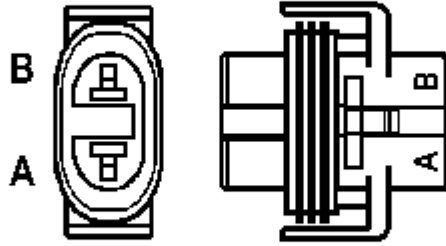


3-pin connector for r.h. H4 farm headlight E08

LEGEND:

- 1 Grey/black lead
- 2 Black lead
- 3 Green/black lead
- XE08 3-pin connector for r.h. H4 farm headlight E08

XE11/L - 2-Pin Connector for l.h. Rear Work Light E11/L



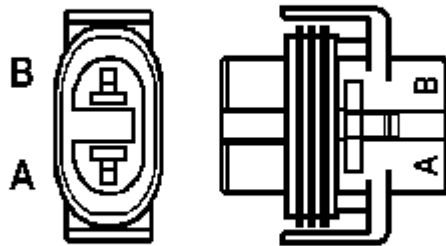
ATXE11

2-pin connector for rear work light E11/L

LEGEND:

- A Black lead
- B Green lead

XE11/R - 2-Pin Connector for r.h. Rear Work Light E11/R



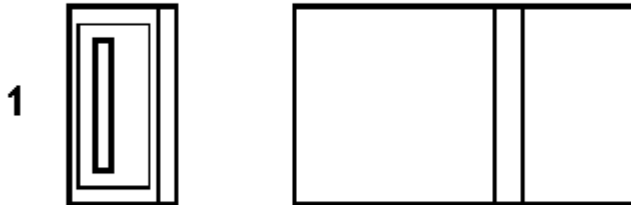
ATXE11

2-pin connector for rear work light E11/R

LEGEND:

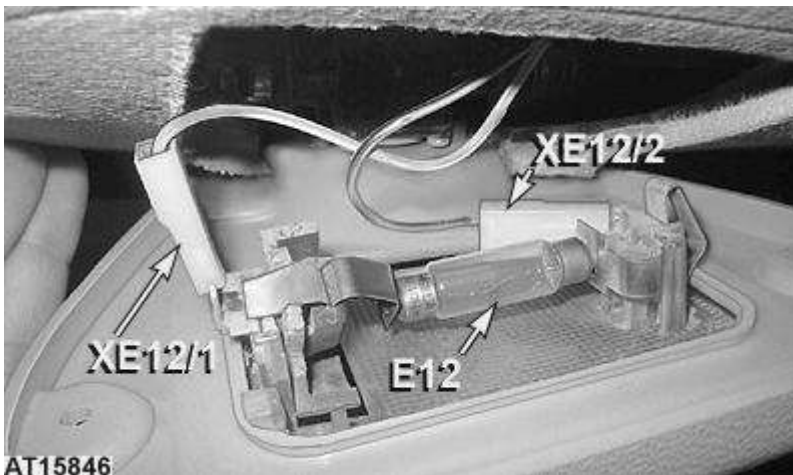
- A Black lead
- B Green lead

XE12 - 2/1-Pin Connectors for Dome Light E12



ATXE12

1-pin connector for dome light E12

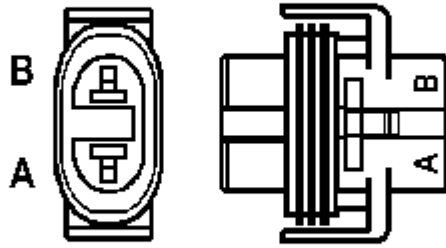


2/1-pin connectors for dome light E12

LEGEND:

- XE12/1 1-pin connector for dome light E12 (red/white lead)
- XE12/2 1-pin connector for dome light E12 (black lead)
- E12 Dome light

XE18/1L - 2-Pin Connector for I.h. Front Work Light E18/1L (Inner)



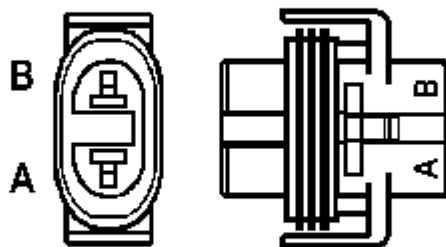
ATXE18

2-pin connector for front work light E18/1L (inner)

LEGEND:

- A Black lead
- B Grey lead

XE18/1R - 2-Pin Connector for r.h. Front Work Light E18/1R (Inner)



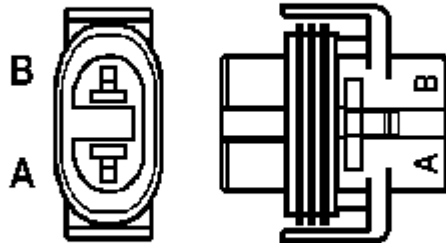
ATXE18

2-pin connector for front work light E18/1R (inner)

LEGEND:

- A Black lead
- B Grey lead

XE18/2L - 2-Pin Connector for l.h. Front Work Light E18/2L (Outer)



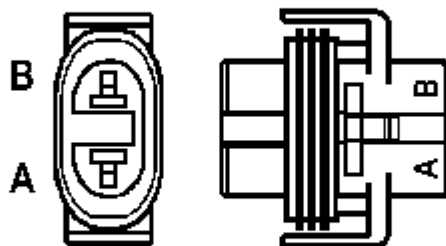
ATXE18

2-pin connector for front work light E18/2L (outer)

LEGEND:

- A Black lead
- B Grey lead

XE18/2R - 2-Pin Connector for r.h. Front Work Light E18/2R (Outer)



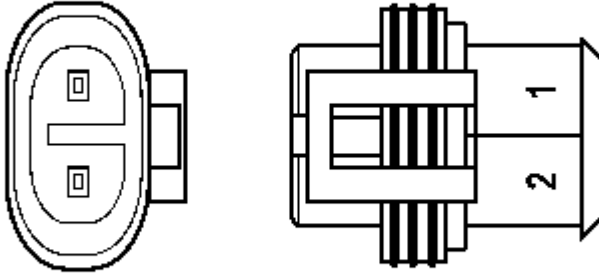
ATXE18

2-pin connector for front work light E18/2R (outer)

LEGEND:

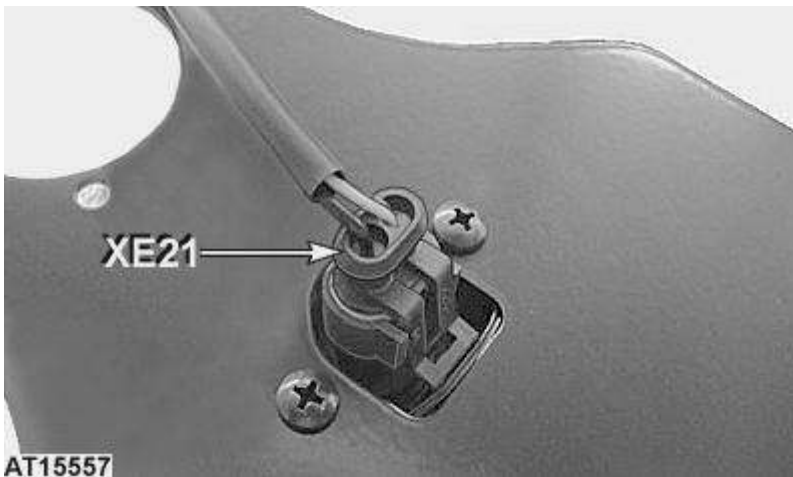
- A Black lead
- B Grey lead

XE21 - 2-Pin Connector for License Plate Light E21



ATXE21

2-pin connector for license plate light E21

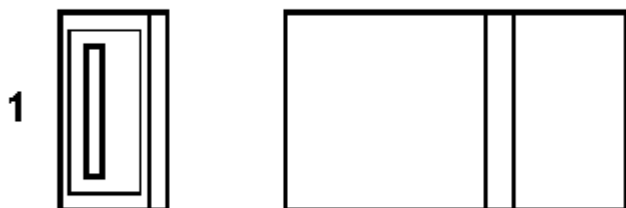


2-pin connector for license plate light E21

LEGEND:

- 1 Black lead
- 2 Yellow/black lead
- XE21 2-pin connector for license plate light E21

XE27 - 2/1-Pin Connectors for Beacon Light E27



ATXE27

2/1-pin connectors for beacon light E27

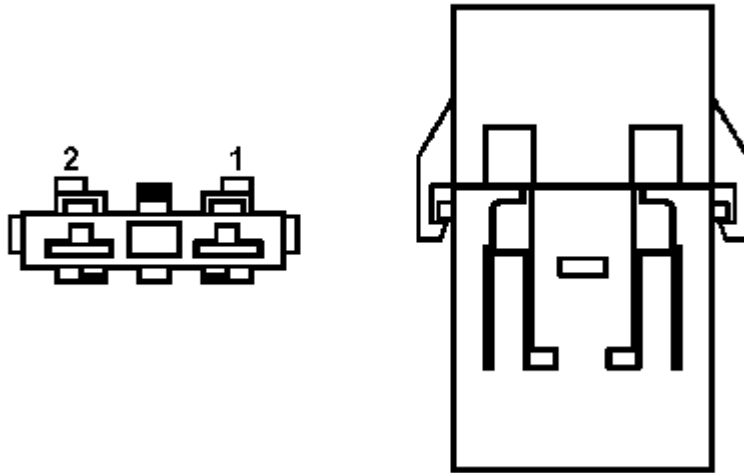


2/1-pin connectors for beacon light E27

LEGEND:

- 1 Pink lead
- 2 Black lead
- XE27 2/1-pin connectors for beacon light E27

XF00 - 2-Pin Connector for Main Fuse F00



ATXF00

XF00 - 2-pin connector for main fuse F00



XF00 - 2-pin connector for main fuse F00

LEGEND:

- XF00 2-pin connector for main fuse F00
- XF16 2-pin connector for main fuse F16
- XF23 2-pin connector for fuse F23 of shut-off system circuit (EHM)
- XK01 4-pin connector for starter relay K01
- XK10 4-pin connector for intake air heater relay K10
- XK17 4-pin connector for relay K17 of shut-off system (EHM)
- XK18 4/1-pin connectors for relay K18 (EHS)
- XK18 II 4/1-pin connectors for relay K18 II (EHS II)

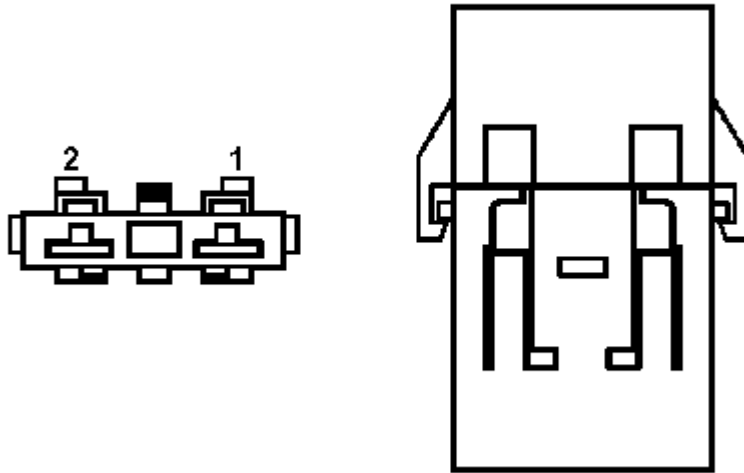
Component information

Component information	
Number of pins:	2
Connection Point:	F00 - Main Fuse for Main Wiring Circuit
Wiring harness:	W01 - Engine Wiring Harness
Circuit:	SE01A - Power Supply, Diagnostic Schematic and Circuit Test

Plug layout

Plug layout	
Pin no.	Wire color
1	red
2	red

XF16 - 2-Pin Connector for Main Fuse F16



ATXF16

XF16 - 2-pin connector for main fuse F16



XF16 - 2-pin connector for main fuse F16

LEGEND:

- XF00 2-pin connector for main fuse F00
- XF16 2-pin connector for main fuse F16
- XF23 2-pin connector for fuse F23 of shut-off system circuit (EHM)
- XK01 4-pin connector for starter relay K01
- XK10 4-pin connector for intake air heater relay K10
- XK17 4-pin connector for relay K17 of shut-off system (EHM)
- XK18 4/1-pin connectors for relay K18 (EHS)
- XK18 II 4/1-pin connectors for relay K18 II (EHS II)

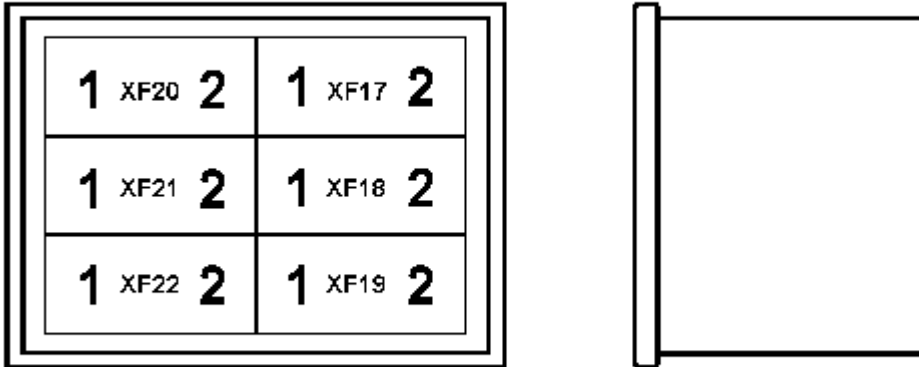
Component information

Component information	
Number of pins:	2
Connection Point:	F16 - Main Fuse for Cab Wiring Circuit
Wiring harness:	W04 - Engine/Cab Wiring Harness
Circuit:	SE01A - Power Supply (Cab Harness), Diagnostic Schematic and Circuit Test

Plug layout

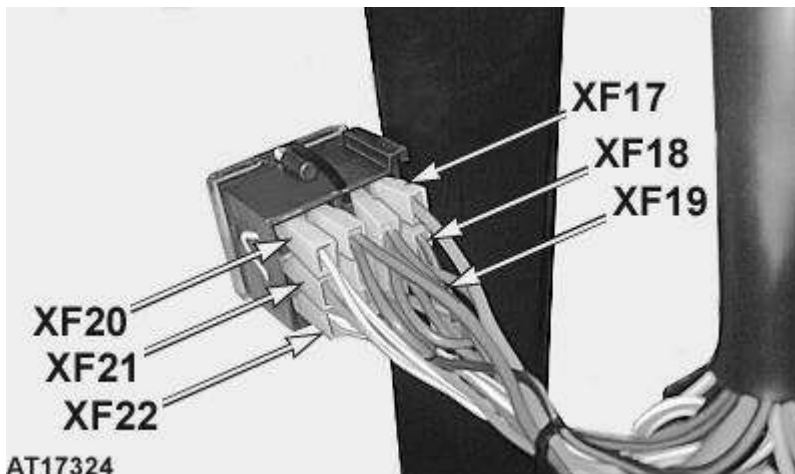
Plug layout	
Pin no.	Wire color
1	red
2	red

XF17 to XF22 - Connectors for Cab Fuses (F17 to F22)



ATXCFB

Connectors of cab fuse box



AT17324

Connectors of cab fuse box

LEGEND:

- XF17 2/1-pin connectors for F17
- XF18 2/1-pin connectors for F18
- XF19 2/1-pin connectors for F19
- XF20 2/1-pin connectors for F20
- XF21 2/1-pin connectors for F21
- XF22 2/1-pin connectors for F22

Component information

Component information	
Number of pins:	12/1
Connection Point:	F17 to F22 - Cab Fuses
Wiring harness:	W05 - Cab Wiring Harness

Plug layout

Plug layout of XF17 (2/1-pin connectors)	
Pin no.	Wire color
1	brown
2	orange

Plug layout

Plug layout of XF18 (2/1-pin connectors)	
Pin no.	Wire color
1	brown
2	red

Plug layout

Plug layout of XF19 (2/1-pin connectors)	
Pin no.	Wire color
1	brown
2	yellow/red

Plug layout

Plug layout of XF20 (2/1-pin connectors)	
Pin no.	Wire color
1	white/green
2	brown

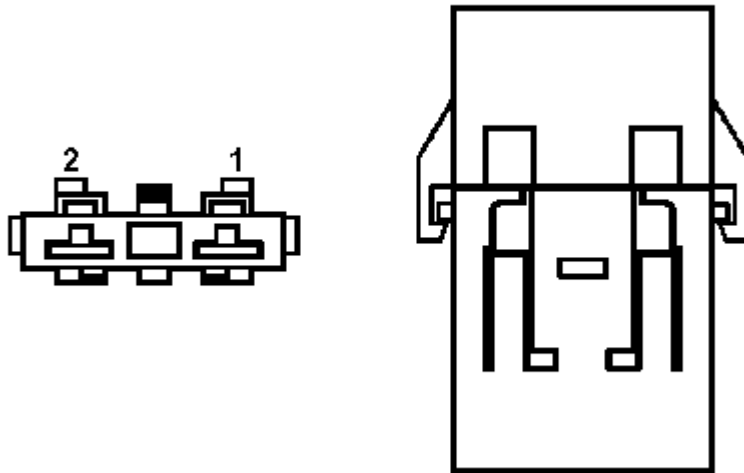
Plug layout

Plug layout of XF21 (2/1-pin connectors)	
Pin no.	Wire color
1	violet
2	brown

Plug layout

Plug layout of XF22 (2/1-pin connectors)	
Pin no.	Wire color
1	white/red
2	red

XF23 - 2-Pin Connector for Fuse F23 of Shut-Off System Circuit (EHM)



ATXF23

XF23 - 2-pin connector for fuse F23 of shut-off system circuit (EHM)



XF23 - 2-pin connector for fuse F23 of shut-off system circuit (EHM)

LEGEND:

- XF00 2-pin connector for main fuse F00
- XF16 2-pin connector for main fuse F16
- XF23 2-pin connector for fuse F23 of shut-off system circuit (EHM)
- XK01 4-pin connector for starter relay K01
- XK10 4-pin connector for intake air heater relay K10
- XK17 4-pin connector for relay K17 of shut-off system (EHM)
- XK18 4/1-pin connectors for relay K18 (EHS)
- XK18 II 4/1-pin connectors for relay K18 II (EHS II)

Component information

Component information	
Number of pins:	2
Connection Point:	F23 - Fuse of Shut-Off System Circuit (EHM)
Wiring harness:	W12 - Shut-Off System Wiring Harness (EHM)
Circuit:	SE26A - Power Supply to Shut-Off System (EHM), Diagnostic Schematic and Circuit Test

Plug layout

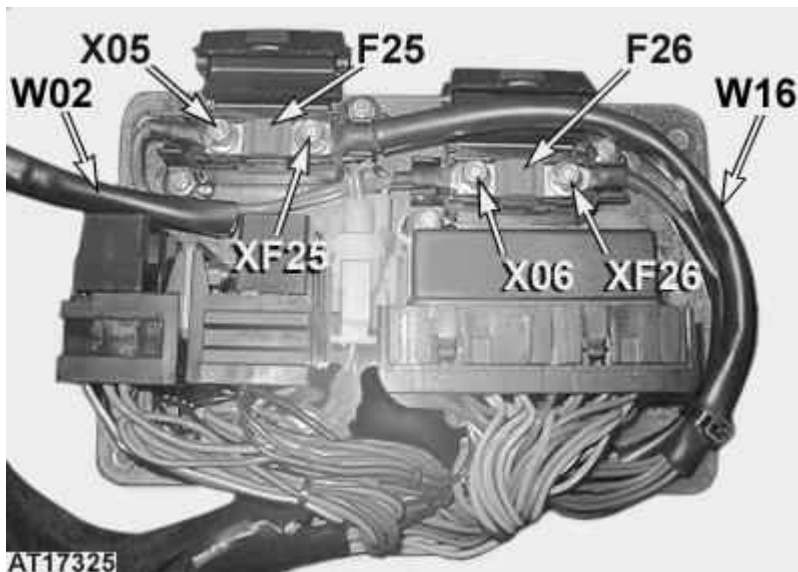
Plug layout	
Pin no.	Wire color
1	red
2	red

XF25 - 1-Pin Connector for Main Fuse F25 of Fuse and Relay Box II (+15)



ATXF25

XF25



Main fuses of fuse and relay box II

LEGEND:

- F25 50 amp main fuses of fuse and relay box II (+15)
- F26 50 amp main fuses of fuse and relay box II (+30)
- X05 1-pin connector for fuse box (+15)
- X06 1-pin connector for fuse box (+30)
- XF25 1-pin connector for main fuse F25 of fuse and relay box II (+15)
- XF26 1-pin connector for main fuse F26 of fuse and relay box II (+30)
- W02 Main wiring harness
- W16 Fuse and relay box II wiring harness

Component information

Component information	
Number of pins:	1
Connection Point:	F25 - Main Fuse of Fuse and Relay Box II (+15)
Wiring harness:	W16 - Fuse and Relay Box II Wiring Harness
Circuit:	SE01A - Power Supply, Diagnostic Schematic and Circuit Test

Plug layout

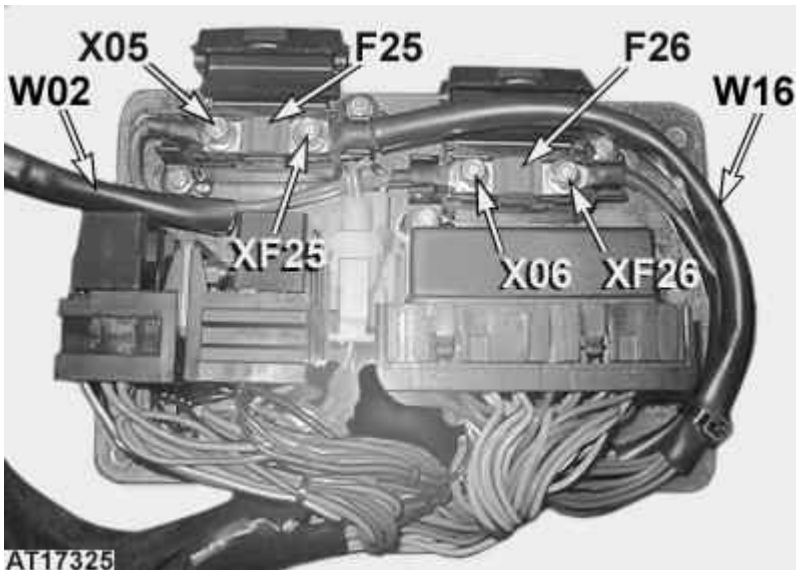
Plug layout	
Pin no.	Wire color
1	brown

XF26 - 1-Pin Connector for Main Fuse F26 of Fuse and Relay Box II (+30)



ATXF26

XF26



Main fuses of fuse and relay box II

LEGEND:

- F25 50 amp main fuses of fuse and relay box II (+15)
- F26 50 amp main fuses of fuse and relay box II (+30)
- X05 1-pin connector for fuse box (+15)
- X06 1-pin connector for fuse box (+30)
- XF25 1-pin connector for main fuse F25 of fuse and relay box II (+15)
- XF26 1-pin connector for main fuse F26 of fuse and relay box II (+30)
- W02 Main wiring harness
- W16 Fuse and relay box II wiring harness

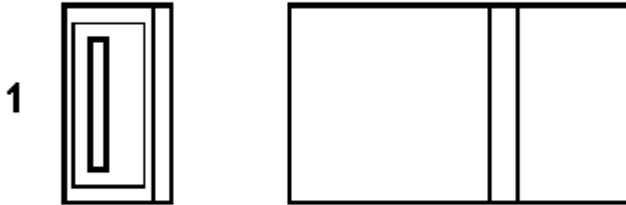
Component information

Component information	
Number of pins:	1
Connection Point:	F26 - Main Fuse of Fuse and Relay Box II (+30)
Wiring harness:	W16 - Fuse and Relay Box II Wiring Harness
Circuit:	SE01A - Power Supply, Diagnostic Schematic and Circuit Test

Plug layout

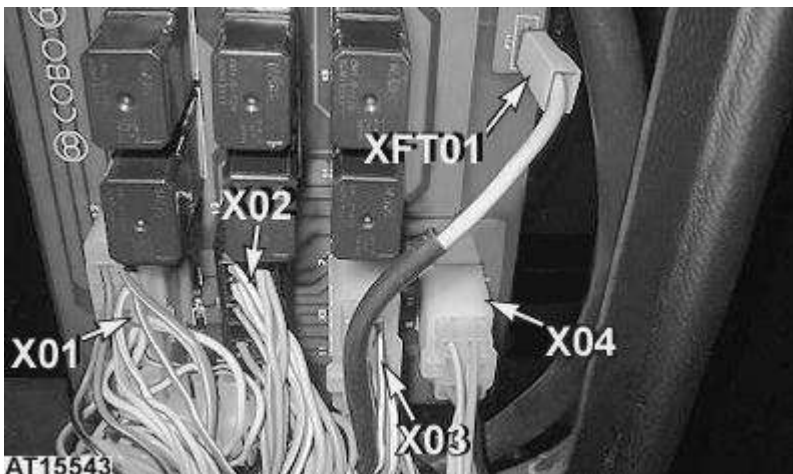
Plug layout	
Pin no.	Wire color
1	red

XFT01 - 1-Pin Connector for Fuse Box (3-Pin Power Outlet)

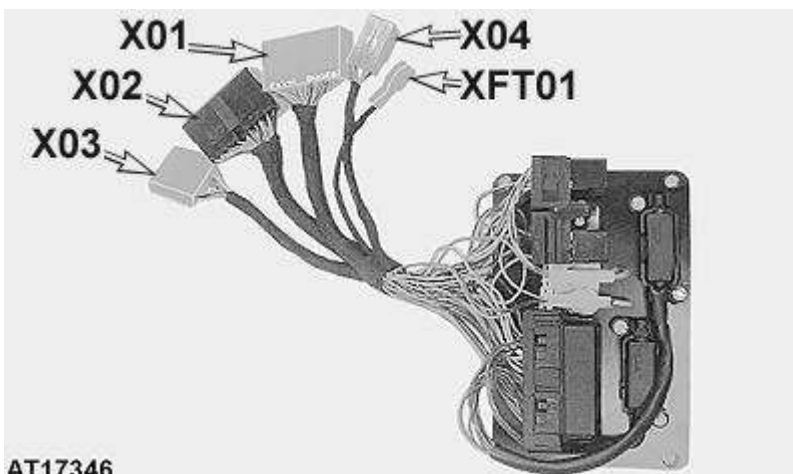


ATXFT01

1-pin connector for fuse box (3-pin power outlet)



Fuse box (Version I)



Fuse box (Version II)

LEGEND:

- X01 21-pin connector for fuse box (white)
- X02 21-pin connector for fuse box (black)
- X03 11-pin connector for fuse box
- X04 5-pin connector for fuse box
- XFT01 1-pin connector for fuse box (3-pin power outlet)

Component information

Component information	
Number of pins:	1
Connection Point:	Fuse and Relay Box (Version I or Version II)
Wiring harness:	W02 - Main Wiring Harness and W16 - Fuse and Relay Box II Wiring Harness

Plug layout

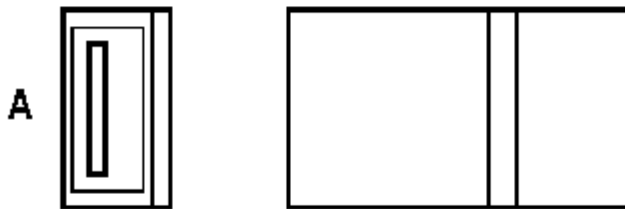
Plug layout of XFT01	
Pin no.	Wire color
1	pink

XG02 - 3/1-Pin Connectors for Alternator G02



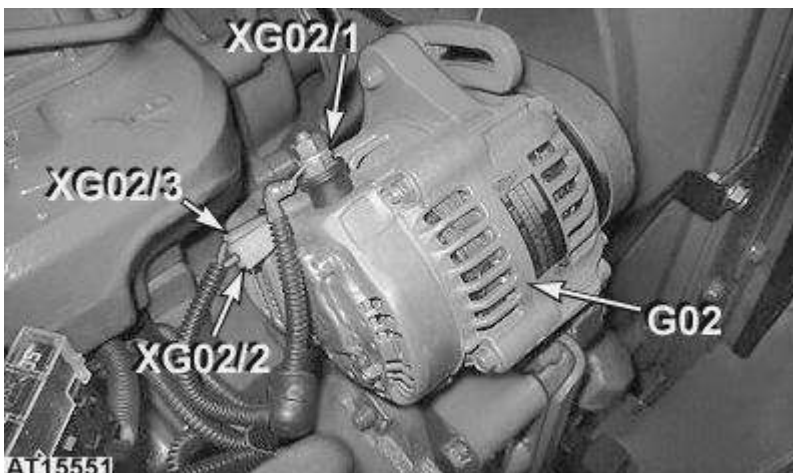
ATXG021

1-pin connector for alternator G02 (+30)

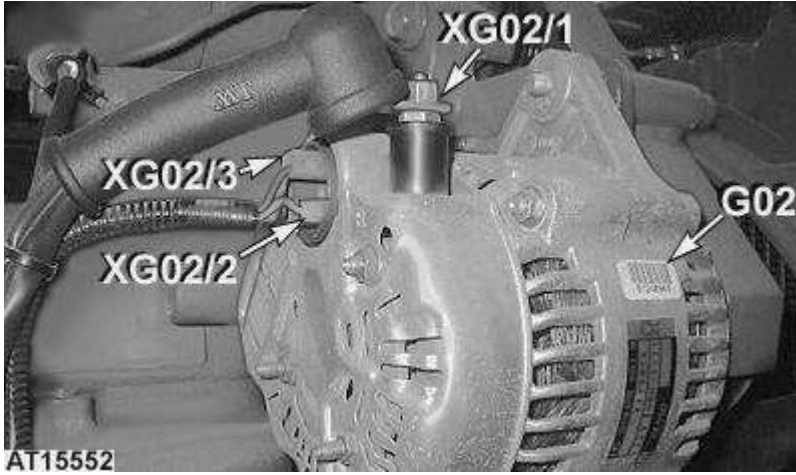


ATXG022

2/1-pin connectors for alternator G02 (+15) and (L)



Alternator G02 (3-cyl.)

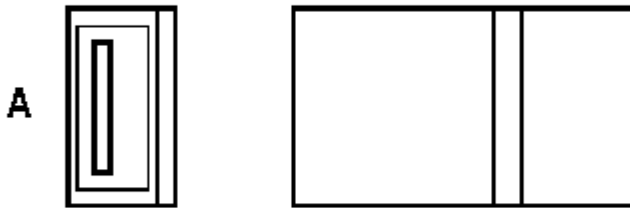


Alternator G02 (4-cyl.)

LEGEND:

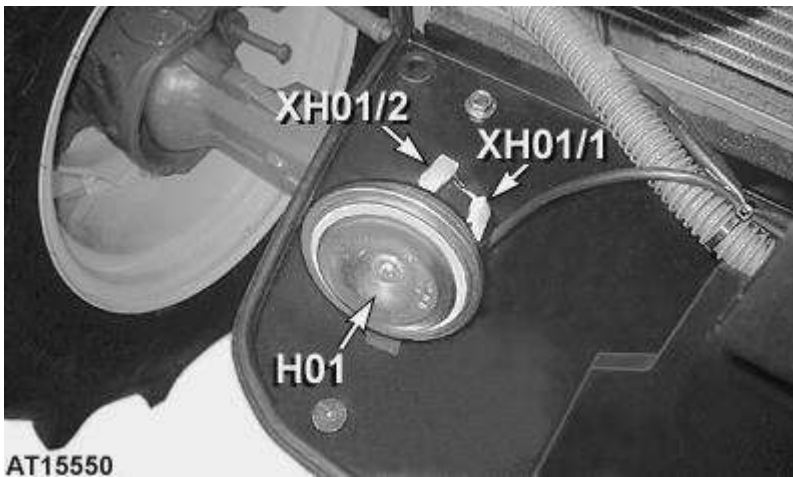
- G02 Alternator
- XG02/1 1-pin connector for alternator G02 (+30) (red lead)
- XG02/2 1-pin connector for alternator G02 (+15) (orange lead)
- XG02/3 1-pin connector for alternator G02 (L) (red/blue lead)

XH01 - 2/1-Pin Connectors for Horn H01



ATXH01

2/1-pin connectors for horn H01

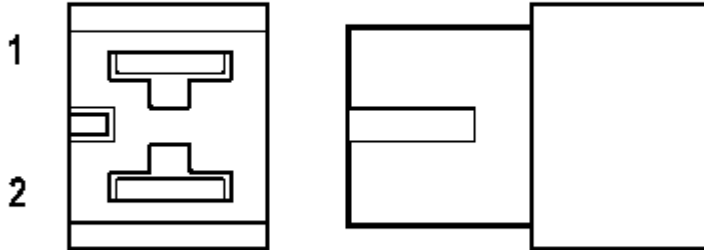


Horn H01

LEGEND:

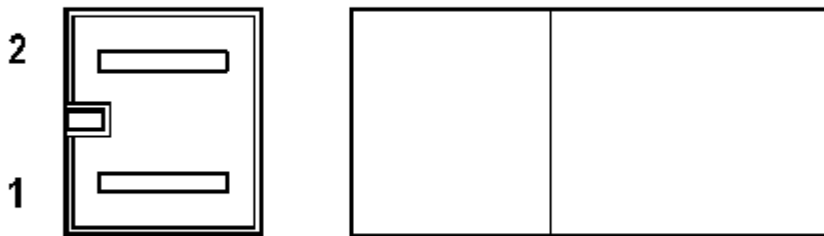
- H01 Horn
- XH01/1 1-pin connector for horn H01 (violet lead)
- XH01/2 1-pin connector for horn H01 (black lead)

XH50 - 2-Pin Connector for Warning Light H50 (EHM or EHM II)



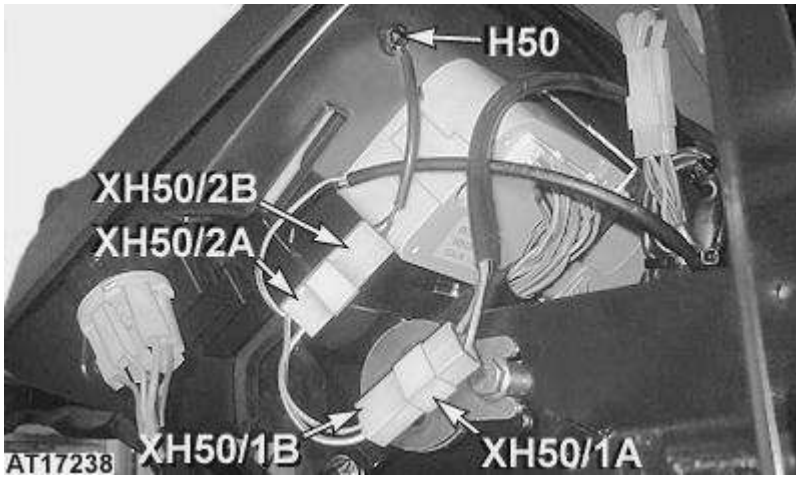
ATXH50A

2-pin connector for warning light H50 (EHM or EHM II)



ATXH50B

2-pin connector for warning light H50 (EHM or EHM II)



2-pin connector for warning light H50 (EHM or EHM II)

LEGEND:

- H50 Warning light (EHM or EHM II)
- XH50/1 2-pin connector for warning light H50 (EHM or EHM II)
- XH50/2 2-pin connector for warning light H50 (EHM or EHM II)

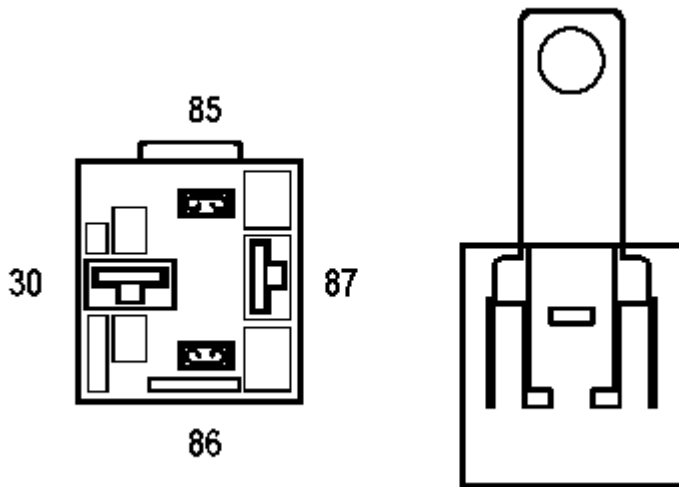
Component information

Component information	
Number of pins:	2
Connection Point:	H50 - Warning Light (EHM or EHM II)
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness (EHM) or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)
Circuit:	SE26A - Warning Light and Oil Filter Restriction Sensor (EHM), Diagnostic Schematic and Circuit Test or SE26B - Warning Light and Oil Filter Restriction Sensor (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

Plug layout XH50	
Pin no.	Wire color
1	grey/black
1	light blue (from XB73)
2	white/red

XK01 - 4-Pin Connector for Starter Relay K01



ATXK01

XK01 - 4-Pin Connector for Starter Relay K01



XK01 - 4-Pin Connector for Starter Relay K01

LEGEND:

- XF00 2-pin connector for main fuse F00
- XF16 2-pin connector for main fuse F16
- XF23 2-pin connector for fuse F23 of shut-off system circuit (EHM)
- XK01 4-pin connector for starter relay K01
- XK10 4-pin connector for intake air heater relay K10
- XK17 4-pin connector for relay K17 of shut-off system (EHM)
- XK18 4/1-pin connectors for relay K18 (EHS)
- XK18 II 4/1-pin connectors for relay K18 II (EHS II)

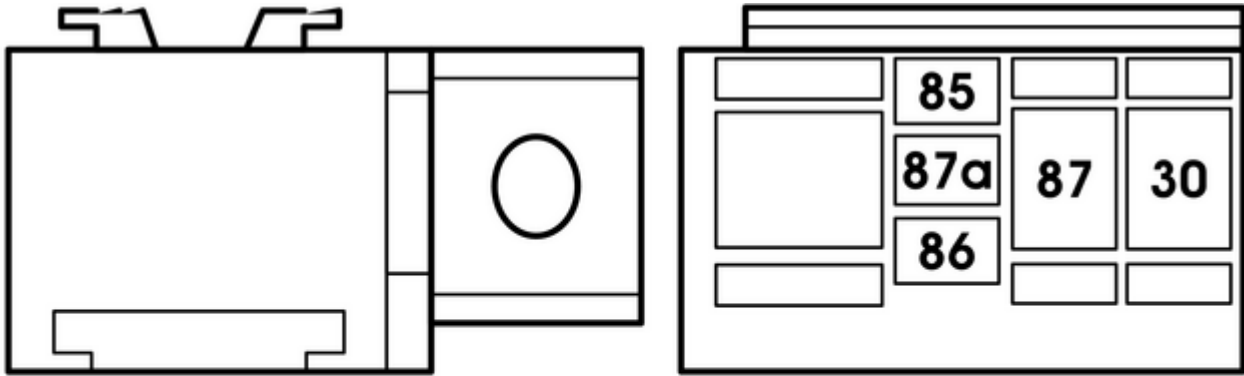
Component information

Component information	
Number of pins:	4
Connection Point:	K01 - Starter Relay
Wiring harness:	W01 - Engine Wiring Harness
Circuit:	SE01B - Starting System without EHM, Diagnostic Schematic and Circuit Test or SE01C - Starting System with EHM or EHM II, Diagnostic Schematic and Circuit Test

Plug layout

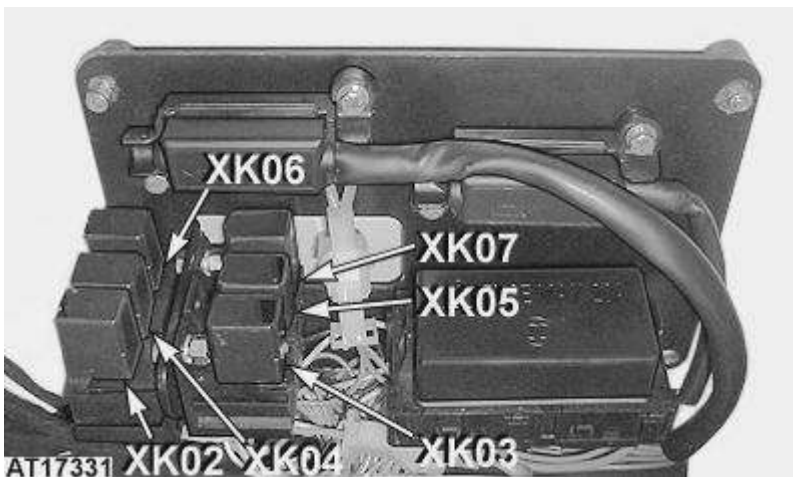
Plug layout	
Pin no.	Wire color
30	red
85	black
86	white/blue
87	orange/green

XK02 - 5-Pin Connector for Hi-Lo Relay (ON)



ATXK02

Relay socket



Relay sockets of fuse and relay box II

LEGEND:

- XK02 5-pin connector for Hi-Lo relay (ON)
- XK03 5-pin connector for Hi-Lo relay (OFF)
- XK04 5-pin connector for differential lock relay
- XK05 5-pin connector for front-wheel drive relay
- XK06 5-pin connector for differential lock relay (OFF)
- XK07 5-pin connector for PTO neutral start relay

Component information

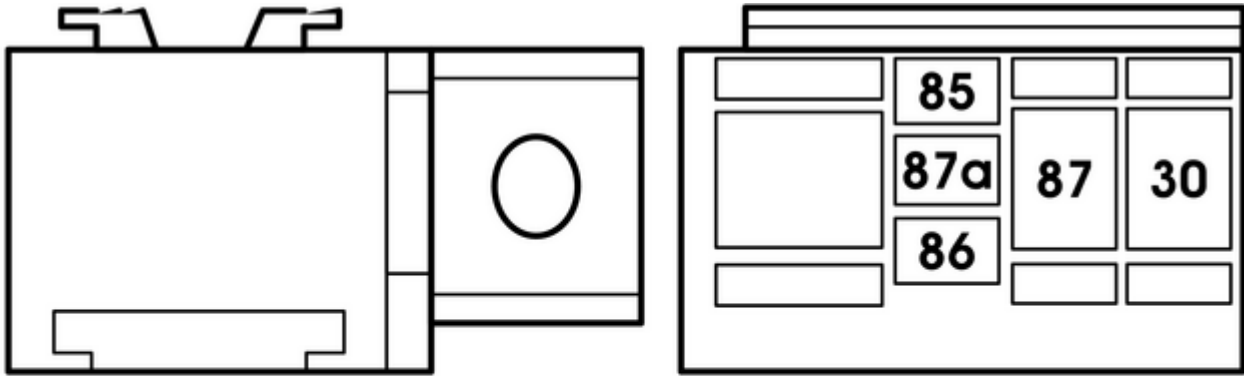
Component information	
Number of pins:	5
Connection Point:	K02 - Hi-Lo Relay (ON)
Wiring harness:	W16 - Fuse and Relay Box II Wiring Harness

Component information	
Circuit:	SE26 - Hi-Lo Selection Switches (EHM), Diagnostic Schematic and Circuit Test or SE27 - Electro-Hydraulic Hi-Lo, Diagnostic Schematic and Circuit Test

Plug layout

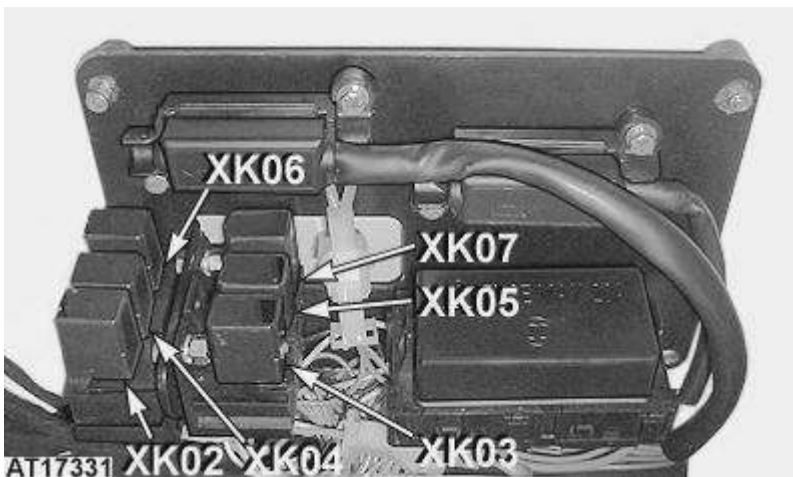
Plug layout	
Pin no.	Wire color
30	brown/white, 1 lead
85	blue/red, 1 lead
86	light blue/green, 2 leads
87	orange/green, 3 leads
87A	not used

XK03 - 5-Pin Connector for Hi-Lo Relay (OFF)



ATXK03

Relay socket



Relay sockets of fuse and relay box II

LEGEND:

- XK02 5-pin connector for Hi-Lo relay (ON)
- XK03 5-pin connector for Hi-Lo relay (OFF)
- XK04 5-pin connector for differential lock relay
- XK05 5-pin connector for front-wheel drive relay
- XK06 5-pin connector for differential lock relay (OFF)
- XK07 5-pin connector for PTO neutral start relay

Component information

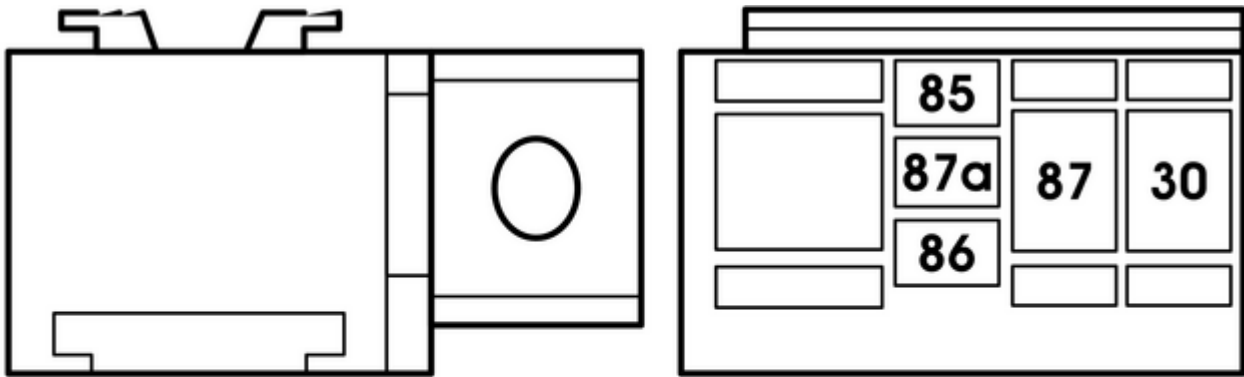
Component information	
Number of pins:	5
Connection Point:	K03 - Hi-Lo Relay (OFF)
Wiring harness:	W16 - Fuse and Relay Box II Wiring Harness

Component information	
Circuit:	SE26 - Hi-Lo Selection Switches (EHM), Diagnostic Schematic and Circuit Test or SE27 - Electro-Hydraulic Hi-Lo, Diagnostic Schematic and Circuit Test

Plug layout

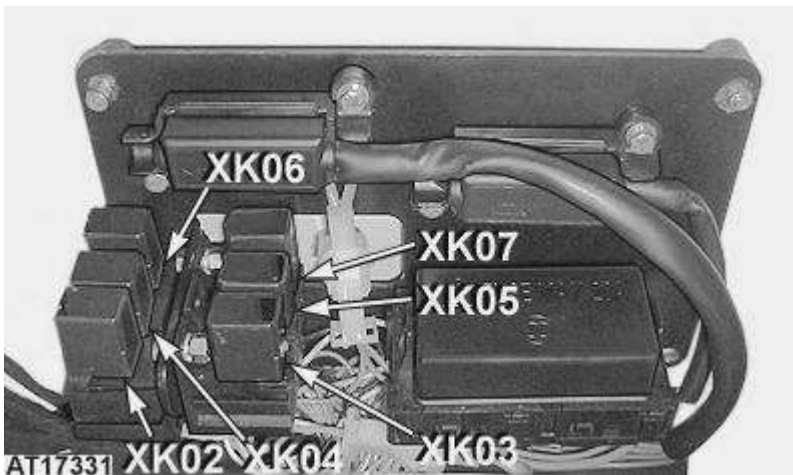
Plug layout	
Pin no.	Wire color
30	black, 1 lead
85	black, 2 leads
86	brown/red, 2 leads
87	not used
87A	blue/red, 1 lead

XK04 - 5-Pin Connector for Differential Lock Relay (ON)



ATXK04

Relay socket



Relay sockets of fuse and relay box II

LEGEND:

- XK02 5-pin connector for Hi-Lo relay (ON)
- XK03 5-pin connector for Hi-Lo relay (OFF)
- XK04 5-pin connector for differential lock relay
- XK05 5-pin connector for front-wheel drive relay
- XK06 5-pin connector for differential lock relay (OFF)
- XK07 5-pin connector for PTO neutral start relay

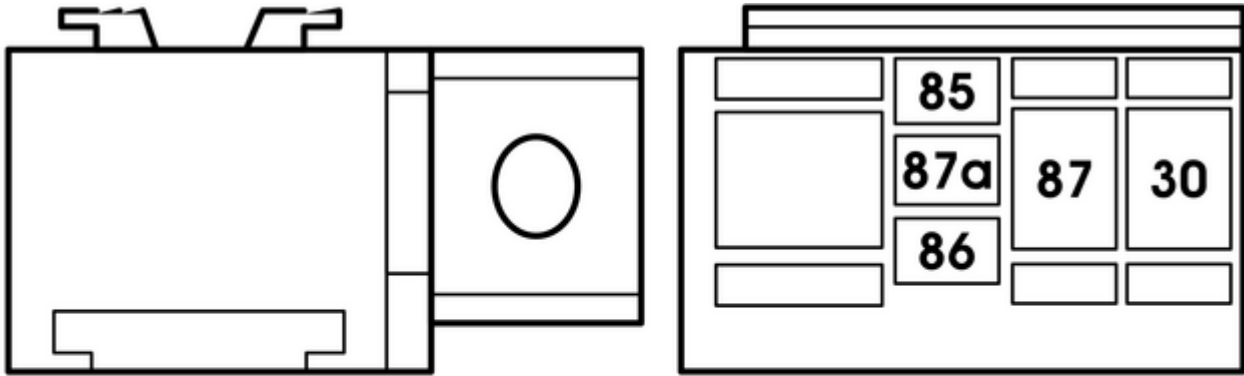
Component information

Component information	
Number of pins:	5
Connection Point:	K04 - Differential Lock Relay (ON)
Wiring harness:	W16 - Fuse and Relay Box II Wiring Harness
Circuit:	SE01A - Power Supply, Diagnostic Schematic and Circuit Test

Plug layout

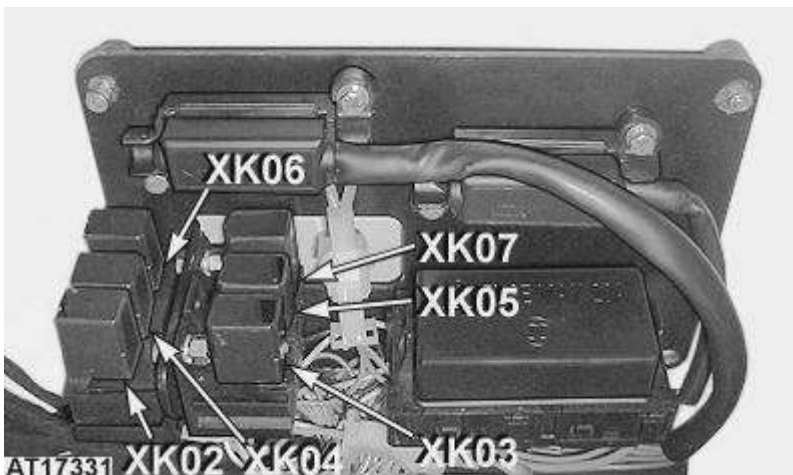
Plug layout	
Pin no.	Wire color
30	brown, 1 lead
85	grey, 1 lead
86	violet, 2 leads
87	violet, 1 lead
87A	not used

XK05 - 5-Pin Connector for Front-Wheel Drive Relay



ATXK05

Relay socket



Relay sockets of fuse and relay box II

LEGEND:

- XK02 5-pin connector for Hi-Lo relay (ON)
- XK03 5-pin connector for Hi-Lo relay (OFF)
- XK04 5-pin connector for differential lock relay
- XK05 5-pin connector for front-wheel drive relay
- XK06 5-pin connector for differential lock relay (OFF)
- XK07 5-pin connector for PTO neutral start relay

Component information

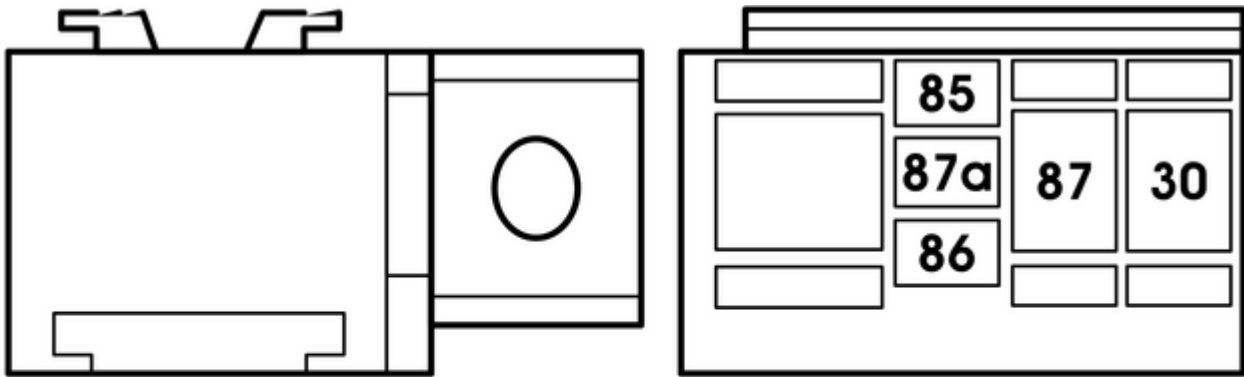
Component information	
Number of pins:	5
Connection Point:	K05 - Front-Wheel Drive Relay
Wiring harness:	W16 - Fuse and Relay Box II Wiring Harness

Component information	
Circuit:	SE16C - Stop Lights, Front-Wheel Drive Circuit and Parking Brake Circuit, Diagnostic Schematic and Circuit Test

Plug layout

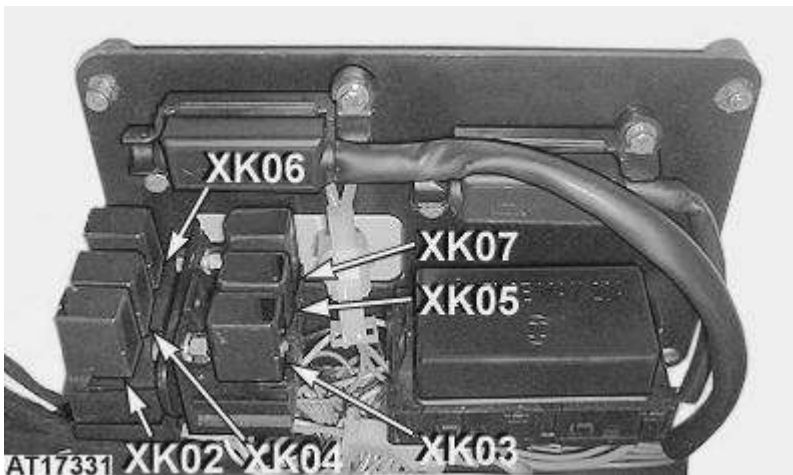
Plug layout	
Pin no.	Wire color
30	pink/black, 1 lead
85	orange/black, 1 lead
86	brown/white 2 leads
87	not used
87A	grey/yellow, 2 leads

XK06 - 5-Pin Connector for Differential Lock Relay (OFF)



ATXK06

Relay socket



Relay sockets of fuse and relay box II

LEGEND:

- XK02 5-pin connector for Hi-Lo relay (ON)
- XK03 5-pin connector for Hi-Lo relay (OFF)
- XK04 5-pin connector for differential lock relay
- XK05 5-pin connector for front-wheel drive relay
- XK06 5-pin connector for differential lock relay (OFF)
- XK07 5-pin connector for PTO neutral start relay

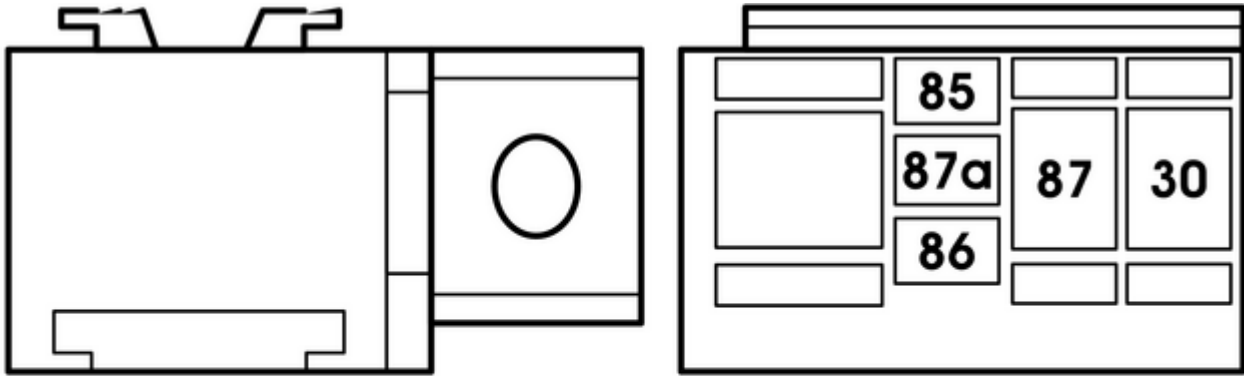
Component information

Component information	
Number of pins:	5
Connection Point:	K06 - Differential Lock Relay (OFF)
Wiring harness:	W16 - Fuse and Relay Box II Wiring Harness
Circuit:	SE01A - Power Supply, Diagnostic Schematic and Circuit Test

Plug layout

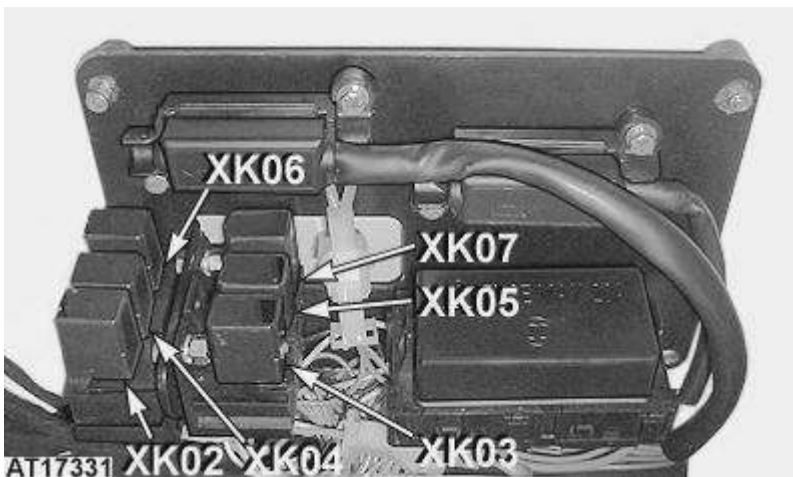
Plug layout	
Pin no.	Wire color
30	grey, 1 lead
85	black, 2 leads
86	violet/red, 2 leads
87	not used
87A	black, 2 leads

XK07 - 5-Pin Connector for PTO Neutral Start Relay



ATXK07

Relay socket



Relay sockets of fuse and relay box II

LEGEND:

- XK02 5-pin connector for Hi-Lo relay (ON)
- XK03 5-pin connector for Hi-Lo relay (OFF)
- XK04 5-pin connector for differential lock relay
- XK05 5-pin connector for front-wheel drive relay
- XK06 5-pin connector for differential lock relay (OFF)
- XK07 5-pin connector for PTO neutral start relay

Component information

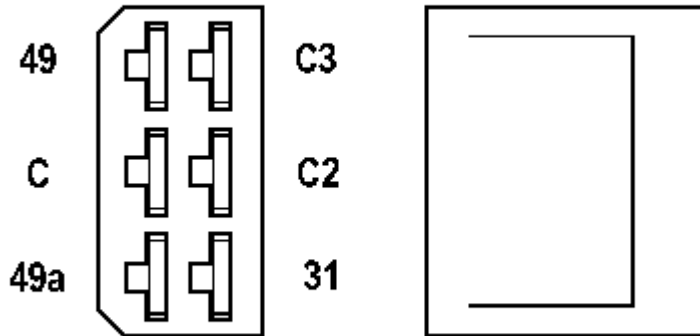
Component information	
Number of pins:	5
Connection Point:	K07 - PTO Neutral Start Relay
Wiring harness:	W16 - Fuse and Relay Box II Wiring Harness

Component information	
Circuit:	SE01B - Starting System without EHM, Diagnostic Schematic and Circuit Test or SE01C - Starting System with EHM or EHM II, Diagnostic Schematic and Circuit Test

Plug layout

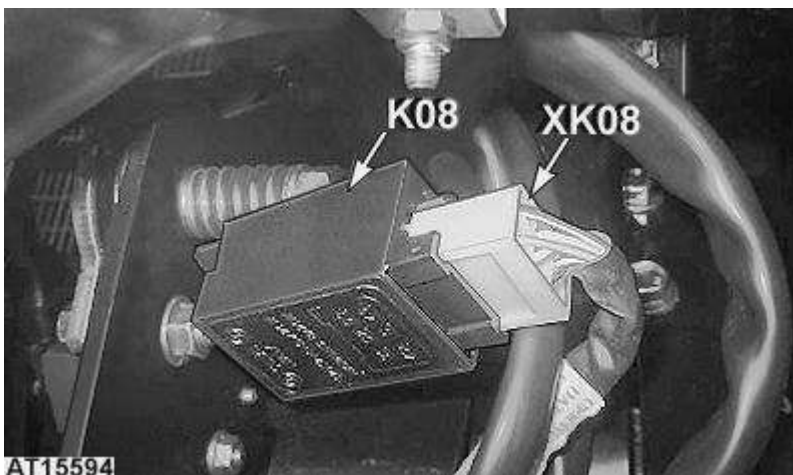
Plug layout	
Pin no.	Wire color
30	white/blue, 1 lead
85	black, 1 lead
86	grey/white, 1 lead
87	not used
87A	white/blue, 1 lead

XK08 - 6-Pin Connector for Turn/Warn Signal Relay K08



ATXK08

6-pin connector for turn/warn signal relay K08

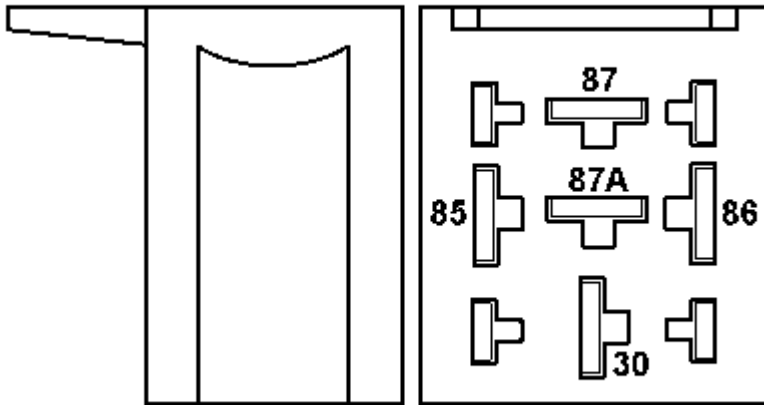


6-pin connector for turn/warn signal relay K08

LEGEND:

- C Light blue lead
- C2 Yellow/green lead
- C3 White/orange lead
- 31 Black lead
- 49 White/brown lead
- 49A Black/white lead
- XK08 6-pin connector for turn/warn signal relay K08
- K08 Turn/warn signal relay

XK09 - 5-Pin Connector for Trailer Brake Relay K09



ATXK09

Trailer brake relay

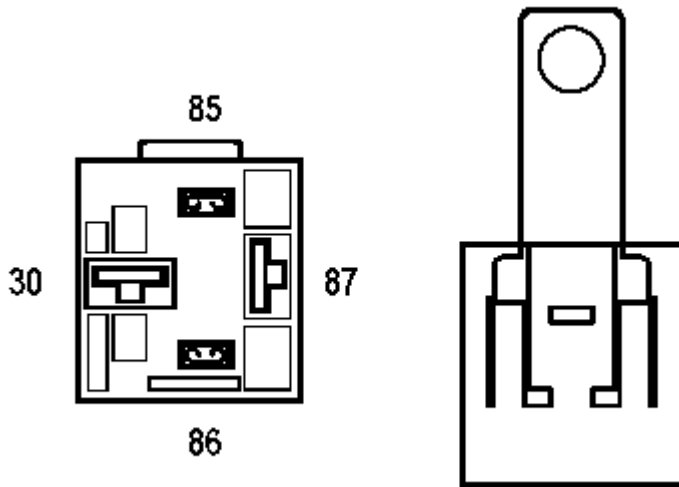


Trailer brake relay

LEGEND:

- 30 Orange/black lead
- 85 Orange/black lead
- 86 Orange/black lead
- 87 Not used
- 87A White/blue lead
- XK09 5-pin connector for trailer brake relay K09

XK10 - 4-Pin Connector for Intake Air Heater Relay K10



ATXK10

XK10 - 4-pin connector for intake air heater relay K10



XK01 - 4-Pin Connector for Starter Relay K01

LEGEND:

- XF00 2-pin connector for main fuse F00
- XF16 2-pin connector for main fuse F16
- XF23 2-pin connector for fuse F23 of shut-off system circuit (EHM)
- XK01 4-pin connector for starter relay K01
- XK10 4-pin connector for intake air heater relay K10
- XK17 4-pin connector for relay K17 of shut-off system (EHM)
- XK18 4/1-pin connectors for relay K18 (EHS)
- XK18 II 4/1-pin connectors for relay K18 II (EHS II)

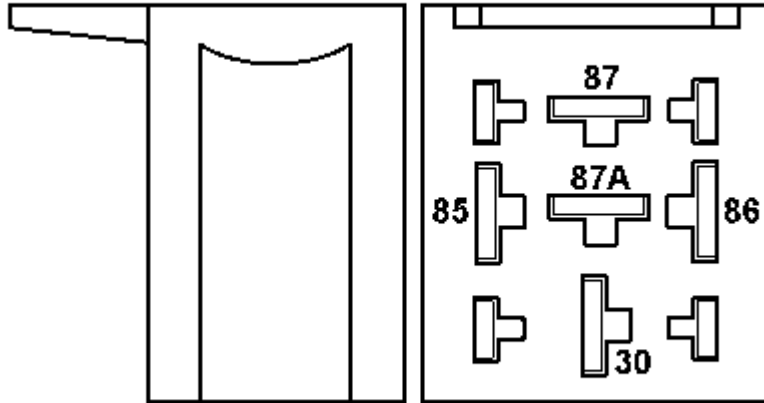
Component information

Component information	
Number of pins:	4
Connection Point:	K10 - Intake Air Heater Relay
Wiring harness:	W10 - Intake Air Heater Wiring Harness
Circuit:	SE01E - Intake Air Heater, Diagnostic Schematic and Circuit Test

Plug layout

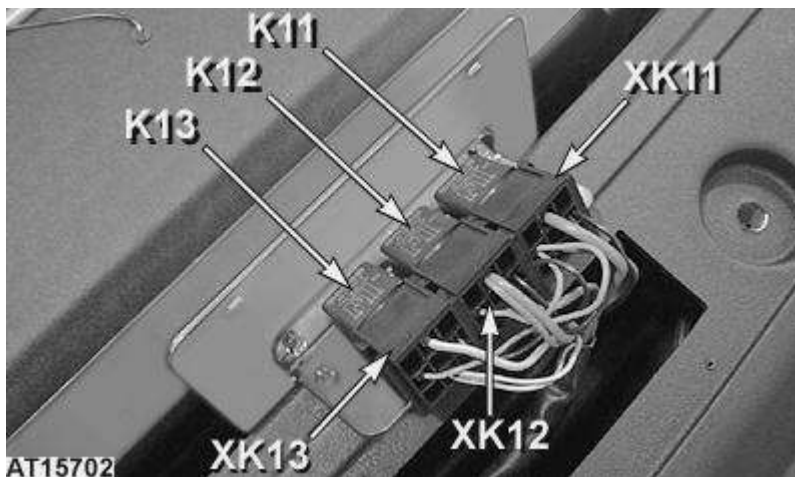
Plug layout	
Pin no.	Wire color
30	red
85	black
86	white
87	white

XK11 - 5-Pin Connector for Relay of Fan Motor (Tractors with Cab)



ATXK11

Relay socket K11

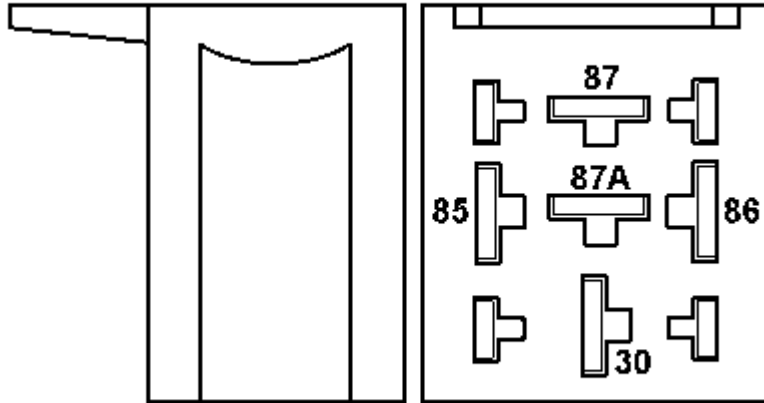


Relays K11, K12 and K13

LEGEND:

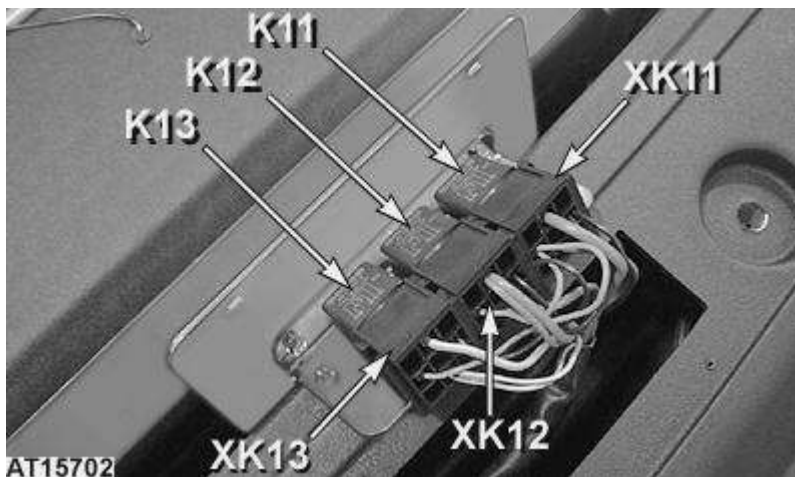
- 30 Red lead
- 85 Black lead
- 86 Orange lead
- 87 Brown lead
- 87A Not used
- XK11 5-pin connector for relay of fan motor (tractors with cab)
- XK12 5-pin connector for rear work light relay (tractors with cab)
- XK13 5-pin connector for front work light relay (tractors with cab)
- K11 Relay of fan motor (tractors with cab)
- K12 Rear work light relay (tractors with cab)
- K13 Front work light relay (tractors with cab)

XK12 - 5-Pin Connector for Rear Work Light Relay (Tractors with Cab)



ATXK12

Relay socket K12

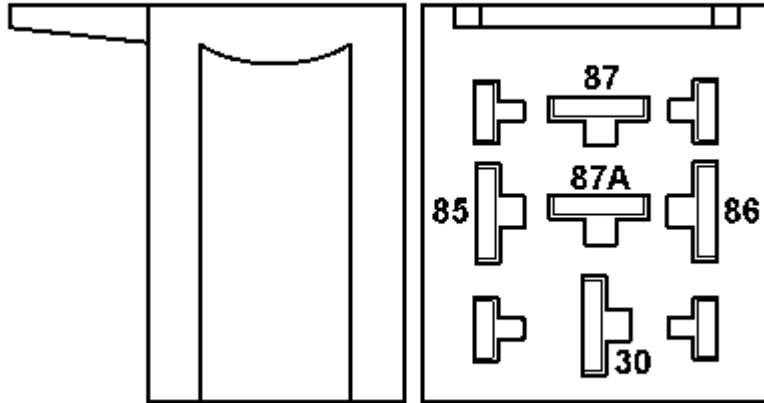


Relays K11, K12 and K13

LEGEND:

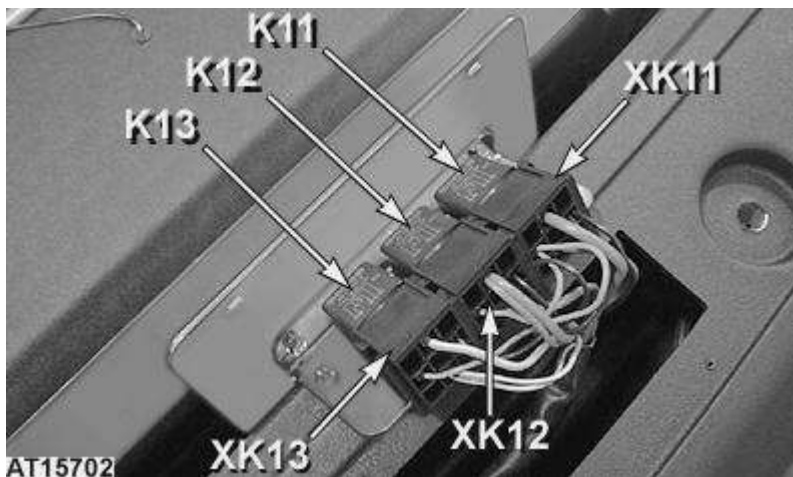
- 30 Red lead
- 85 Black lead
- 86 Orange lead
- 87 Brown lead
- 87A Not used
- XK11 5-pin connector for relay of fan motor (tractors with cab)
- XK12 5-pin connector for rear work light relay (tractors with cab)
- XK13 5-pin connector for front work light relay (tractors with cab)
- K11 Relay of fan motor (tractors with cab)
- K12 Rear work light relay (tractors with cab)
- K13 Front work light relay (tractors with cab)

XK13 - 5-Pin Connector for Front Work Light Relay (Tractors with Cab)



ATXK13

Relay socket K13

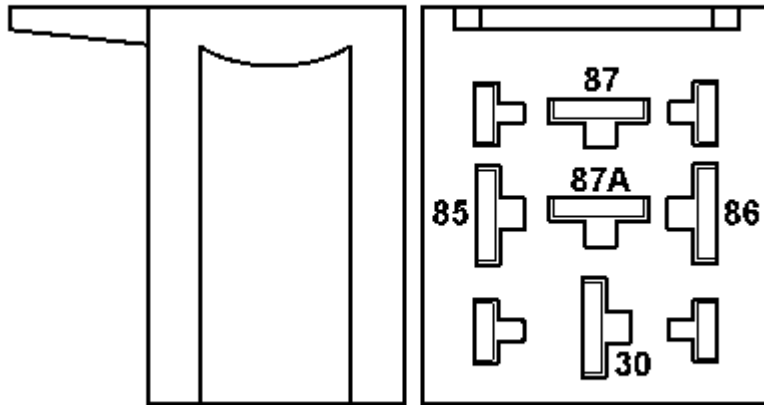


Relays K11, K12 and K13

LEGEND:

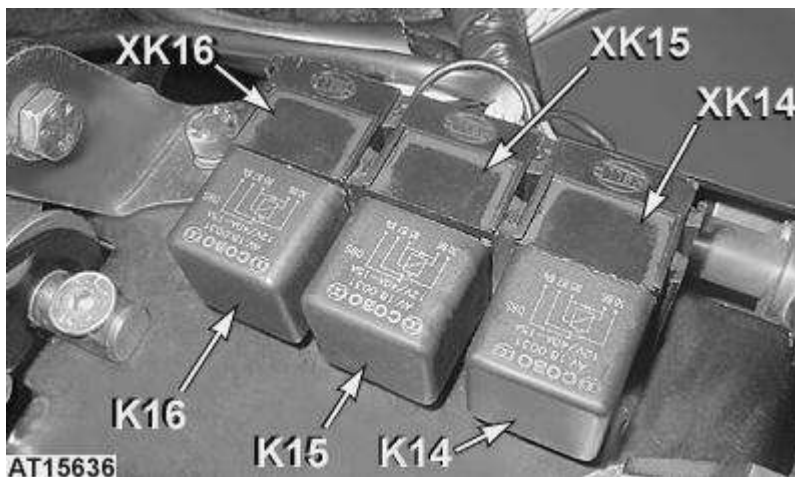
- 30 Violet lead
- 85 Black lead
- 86 Orange/red lead
- 87 Black/grey lead
- 87A Not used
- XK11 5-pin connector for relay of fan motor (tractors with cab)
- XK12 5-pin connector for rear work light relay (tractors with cab)
- XK13 5-pin connector for front work light relay (tractors with cab)
- K11 Relay of fan motor (tractors with cab)
- K12 Rear work light relay (tractors with cab)
- K13 Front work light relay (tractors with cab)

XK14 - 5-Pin Connector for Front-Wheel Drive Relay K14 (EHM or EHM II)



ATXK14

5-pin connector for front-wheel drive relay K14 (EHM or EHM II)



Relays K14, K15 and K16

LEGEND:

- K14 Front-wheel drive relay (EHM or EHM II)
- K15 Declutch relay (EHM or EHM II)
- K16 Neutral start relay (EHM or EHM II)
- XK14 5-pin connector for front-wheel drive relay K14 (EHM or EHM II)
- XK15 5-pin connector for declutch relay K15 (EHM or EHM II)
- XK16 5-pin connector for neutral start relay K16 (EHM or EHM II)

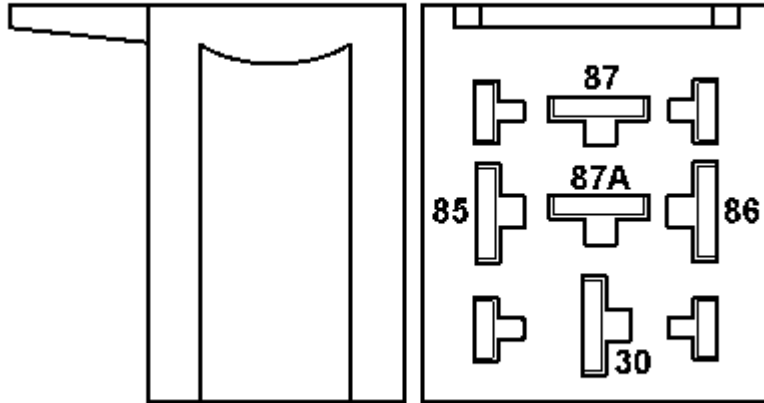
Component information

Component information	
Number of pins:	5
Connection Point:	K14 - Front-Wheel Drive Relay (EHM or EHM II)
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness (EHM) or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)
Circuit:	SE26A - Front-Wheel Drive (EHM), Functional Schematic and Theory of Operation or SE26B - Front-Wheel Drive (EHM II), Functional Schematic and Theory of Operation

Plug layout

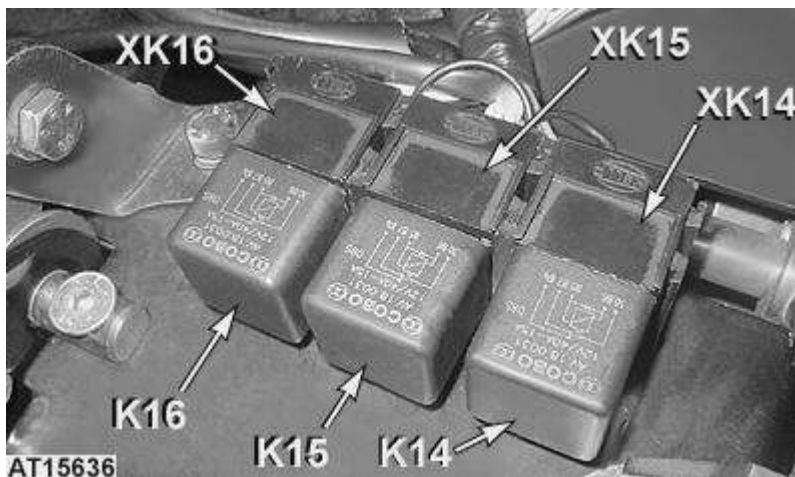
Plug layout		
Pin no.	Wire color on: EHM	Wire color on: EHM II
30	white/red	white/red
85	black	black
86	yellow/green	light blue/yellow
87	pink/black	pink/black
87A	not used	not used

XK15 - 5-Pin Connector for Declutch Relay K15 (EHM or EHM II)



ATXK15

XK15 - 5-pin connector for declutch relay K15 (EHM or EHM II)



Relays K14, K15 and K16

LEGEND:

- K14 Front-wheel drive relay (EHM or EHM II)
- K15 Declutch relay (EHM or EHM II)
- K16 Neutral start relay (EHM or EHM II)
- XK14 5-pin connector for front-wheel drive relay K14 (EHM or EHM II)
- XK15 5-pin connector for declutch relay K15 (EHM or EHM II)
- XK16 5-pin connector for neutral start relay K16 (EHM or EHM II)

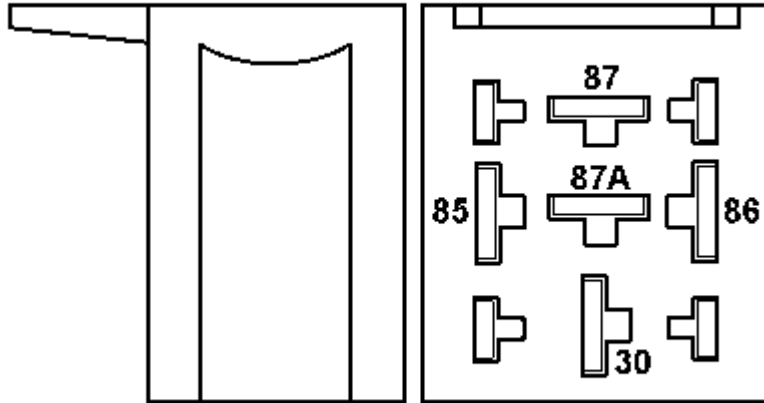
Component information

Component information	
Number of pins:	5
Connection Point:	K15 - Declutch Relay (EHM or EHM II)
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness (EHM) or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)
Circuit:	SE26A - Reverse Drive Lever (EHM), Diagnostic Schematic and Circuit Test or SE26B - Reverse Drive Lever (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

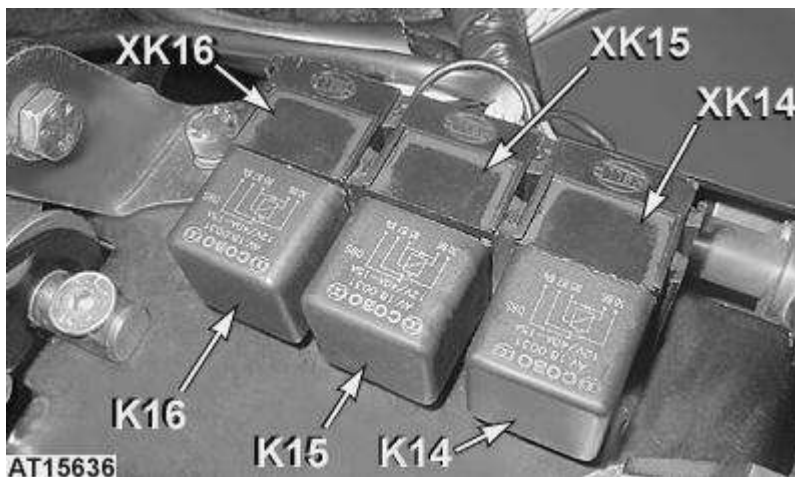
Plug layout		
Pin no.	Wire color on: EHM	Wire color on: EHM II
30	white/red	white/red
85	black	black
86	light blue/white	light blue/white
87	not used	not used
87A	brown/blue	brown/blue

XK16 - 5-Pin Connector for Neutral Start Relay K16 (EHM or EHM II)



ATXK16

XK16 - 5-pin connector for neutral start relay K16 (EHM or EHM II)



Relays K14, K15 and K16

LEGEND:

- K14 Front-wheel drive relay (EHM or EHM II)
- K15 Declutch relay (EHM or EHM II)
- K16 Neutral start relay (EHM or EHM II)
- XK14 5-pin connector for front-wheel drive relay K14 (EHM or EHM II)
- XK15 5-pin connector for declutch relay K15 (EHM or EHM II)
- XK16 5-pin connector for neutral start relay K16 (EHM or EHM II)

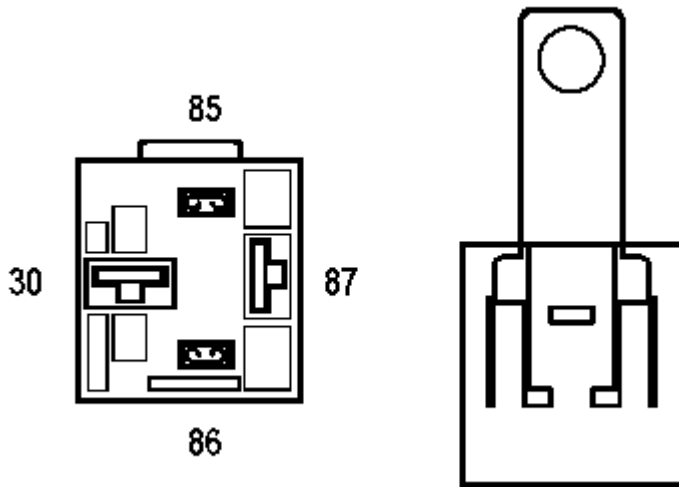
Component information

Component information	
Number of pins:	5
Connection Point:	K16 - Neutral Start Relay (EHM or EHM II)
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness (EHM) or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)
Circuit:	SE01C - Starting System with EHM or EHM II, Diagnostic Schematic and Circuit Test

Plug layout

Plug layout		
Pin no.	Wire color on: EHM	Wire color on: EHM II
30	blue/black	blue/black
85	black	black
86	blue	blue
87	white/blue	white/blue
87A	not used	not used

XK17 - 4-Pin Connector for Relay K17 of Shut-Off System (EHM)



ATXK17

XK17 - 4-pin connector for relay K17 of shut-off system (EHM)



4-pin connector for relay K17 (EHM)

LEGEND:

- XF00 2-pin connector for main fuse F00
- XF16 2-pin connector for main fuse F16
- XF23 2-pin connector for fuse F23 of shut-off system circuit (EHM)
- XK01 4-pin connector for starter relay K01
- XK10 4-pin connector for intake air heater relay K10
- XK17 4-pin connector for relay K17 of shut-off system (EHM)
- XK18 4/1-pin connectors for relay K18 (EHS)
- XK18 II 4/1-pin connectors for relay K18 II (EHS II)

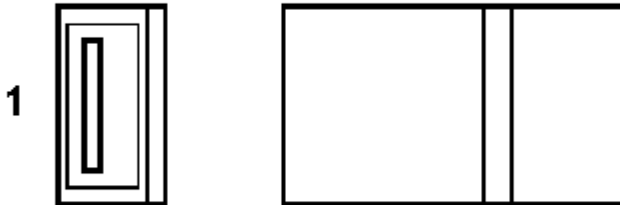
Component information

Component information	
Number of pins:	4
Connection Point:	K17 - Relay of Shut-Off System (EHM)
Wiring harness:	W12 - Shut-Off System Wiring Harness (EHM)
Circuit:	SE26 - Shut-Off System (EHM), Functional Schematic and Theory of Operation

Plug layout

Plug layout	
Pin no.	Wire color
30	red
85	black
86	blue/red
87	white/red

XK18 - 4/1-Pin Connectors for Relay K18 (EHS)



ATXK18

4/1-pin connectors for relay K18 (EHS)



4/1-pin connectors for relay K18 (EHS)

LEGEND:

- F24 20 amp fuse for electronic hitch sensing circuit (EHS)
- K18 Relay of electronic hitch sensing (EHS)

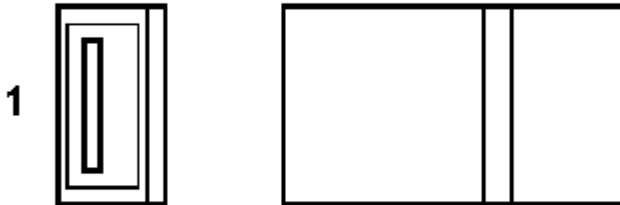
Component information

Component information	
Number of pins:	4/1
Connection Point:	K18 - Relay of Electronic Hitch Sensing (EHS)
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS)
Circuit:	SE15A - Power Supply of EHS System, Diagnostic Schematic and Circuit Test

Plug layout

Plug layout	
Pin no.	Wire color:
XK18/30	red
XK18/85	black
XK18/86	blue/red
XK18/87	red

XK18 II - 4/1-Pin Connectors for Relay K18 II (EHS II)



ATXK18

4/1-pin connectors for relay K18 II (EHS II)



4/1-pin connectors for relay K18 II (EHS II)

LEGEND:

- F24 II 20 amp fuse for electronic hitch sensing circuit (EHS II)
- K18 II Relay of electronic hitch sensing (EHS II)

Component information

Component information	
Number of pins:	4/1
Connection Point:	K18 II - Relay of Electronic Hitch Sensing (EHS II)
Wiring harness:	W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15B - Power Supply of EHS II System, Diagnostic Schematic and Circuit Test

Plug layout

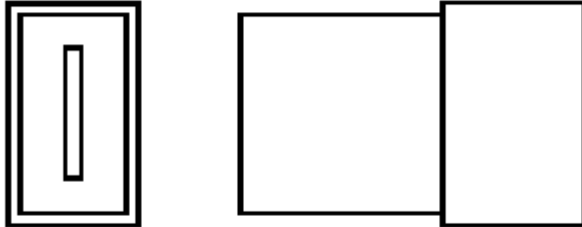
Plug layout	
Pin no.	Wire color
XK18 II/30	red
XK18 II/85	black
XK18 II/86	blue/red
XK18 II/87	black

XM01 - Connectors for Starter Motor M01



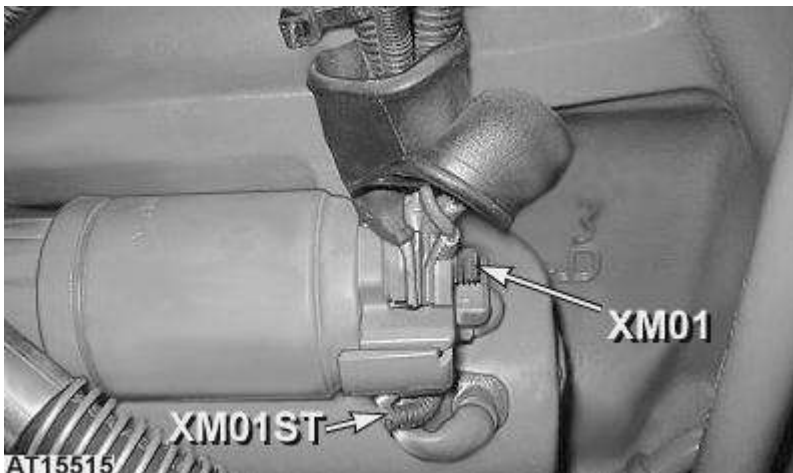
ATXM01

Connectors to starter motor



ATXM01ST

Connector for starter motor M01 (activating lead)



AT15515

Connectors to starter motor

LEGEND:

- XM01/1 Connector for starter motor M01 (main fuse F00 and alternator G02) (red lead)
- XM01/2 Connector for starter motor M01 (main fuse F16) (red lead)
- XM01/3 Connector for starter motor M01 (intake air heater R15) (white lead)
- XM01/4 Connector for starter motor M01 (battery G01)
- XM01/5 Connector for starter motor M01 (EHS or EHS II) (red lead)
- XM01/6 Connector for starter motor M01 (EHM) (red lead)
- XM01ST Connector for starter motor M01 (activating lead) (blue lead)

XM02 - 1-Pin Connector for Air-Conditioning Compressor Clutch M02



ATXM02

1-pin connector for air-conditioning compressor clutch M02



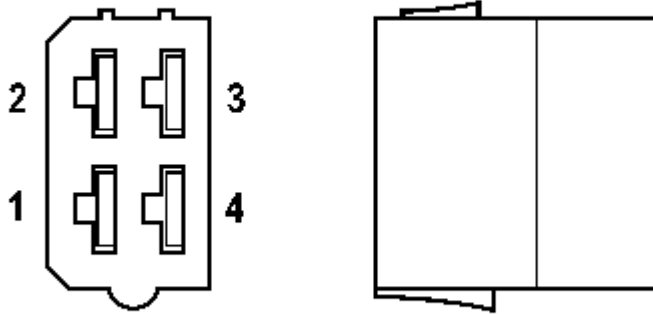
1-pin connector for air-conditioning compressor clutch M02

LEGEND:

- A Yellow lead

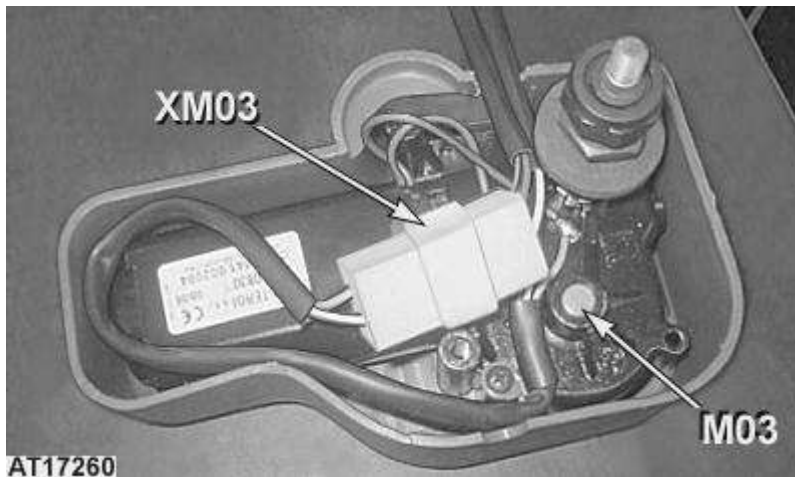
[XM02](#) 1-pin connector for air-conditioning compressor clutch M02

XM03 - 4-Pin Connector for Front Wiper Motor M03



ATXM03

4-pin connector



4-pin connector for front wiper motor M03

LEGEND:

- M03 Front wiper motor
- XM03 4-pin connector for front wiper motor M03

Component information

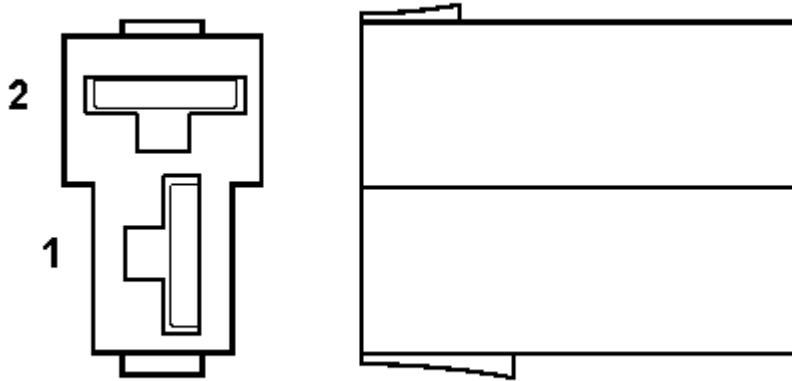
Component information	
Number of pins:	4
Connection Point:	W05 - Cab Wiring Harness and W15 - Front Wiper Motor Wiring Harness
Wiring harness:	W05 - Cab Wiring Harness and W15 - Front Wiper Motor Wiring Harness

Component information	
Circuit:	SE11 - Wiper and Washer System, Diagnostic Schematic and Circuit Test

Plug layout

Plug layout	
Pin no.	Wire color
1	blue
2	light blue/black
3	black
4	blue/black

XM04 - 2-Pin Connector for Rear Wiper Motor with Switch M04



ATXM04

2-pin connector for rear wiper motor with switch M04

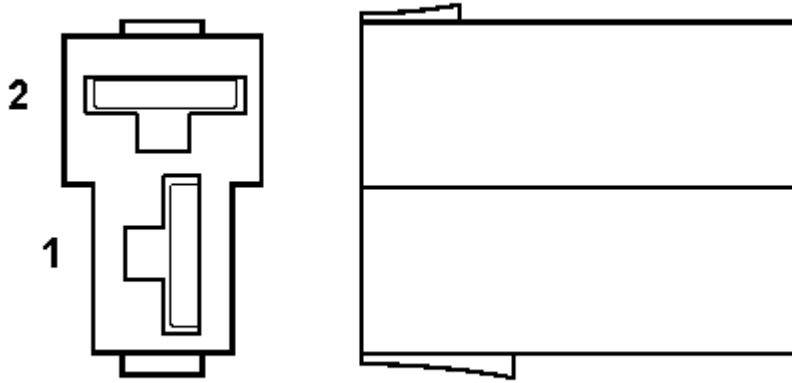


2-pin connector for rear wiper motor with switch M04

LEGEND:

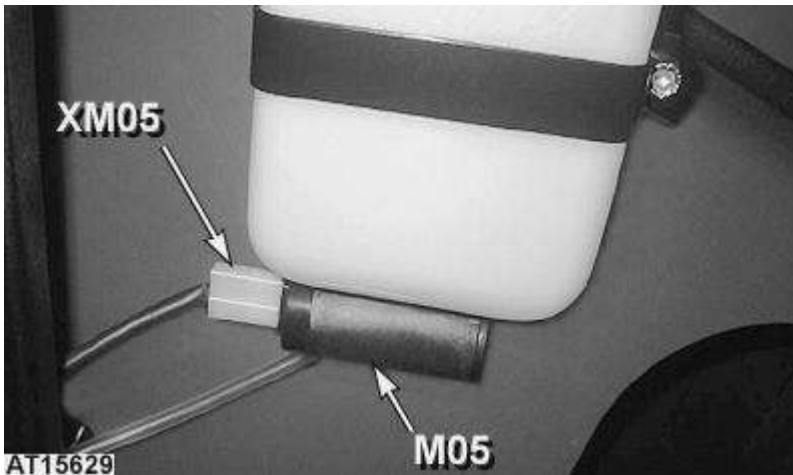
- 1 Lead
- 2 Lead
- XM04 2-pin connector for rear wiper motor with switch M04

XM05 - 2-Pin Connector for Pump of Washer System M05



ATXM05

2-pin connector for pump of washer system M05

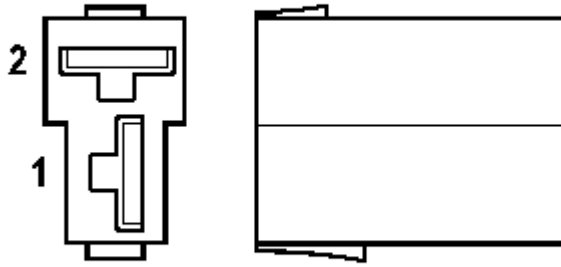


2-pin connector for pump of washer system M05

LEGEND:

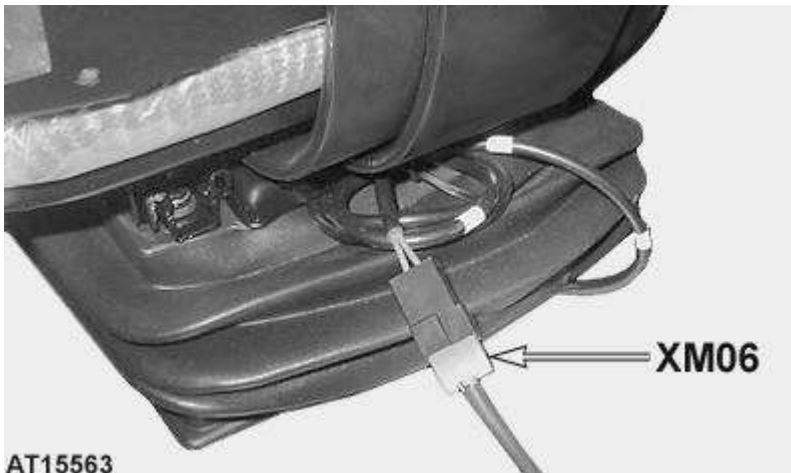
- 1 Lead
- 2 Lead
- XM05 2-pin connector for pump of washer system M05
- M05 Pump of washer system

XM06 - 2-Pin Connector for Air Suspension Seat Compressor Motor M06



ATXM06

2-pin connector for air suspension seat compressor motor M06

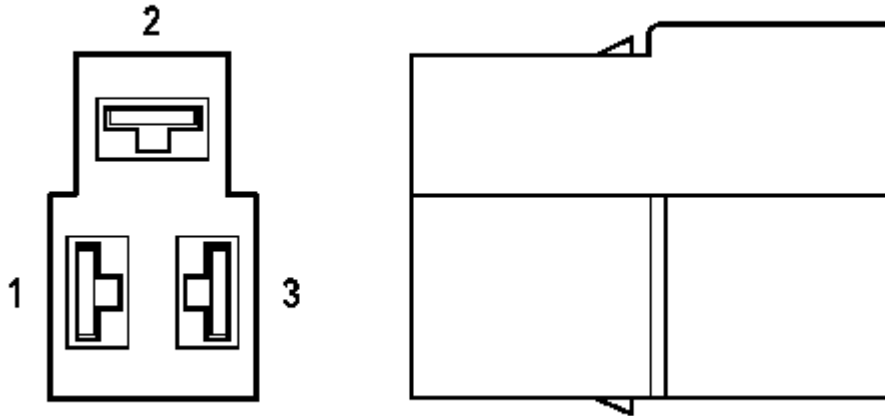


2-pin connector for air suspension seat compressor motor M06

LEGEND:

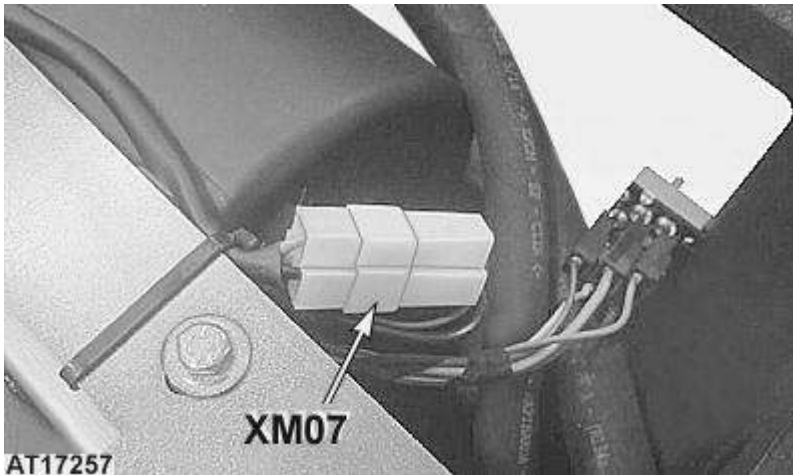
- 1 Brown/yellow lead
- 2 Black lead
- XM06 2-pin connector for air suspension seat compressor motor M06

XM07 - 3-Pin Connectors for Fan Motor M07



ATXM07

3-pin connectors for fan motor M07



3-pin connectors for fan motor M07

LEGEND:

XM07 3-pin connectors for fan motor M07

Component information

Component information	
Number of pins:	3
Connection Point:	M07 - Fan Motor
Wiring harness:	W14 - Fan and Air-Conditioning Wiring Harness
Circuit:	SE10A - Fan Motor M07, Diagnostic Schematic and Circuit Test and SE10B - Air-Conditioning System, Diagnostic Schematic and Circuit Test

Plug layout

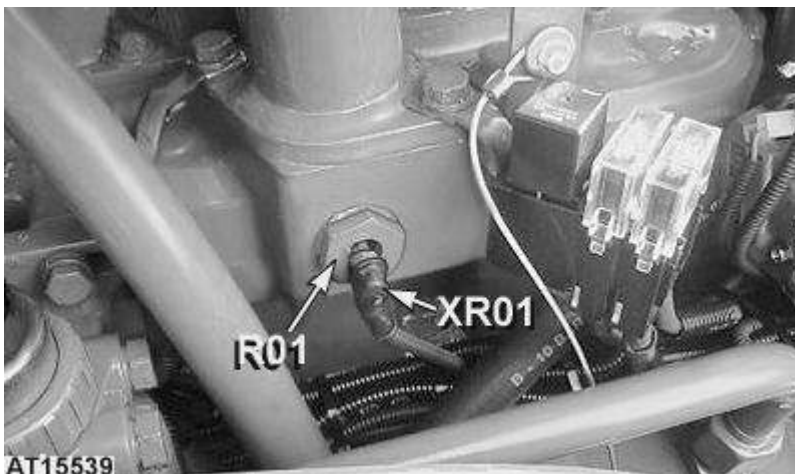
Plug layout	
Pin no.	Wire color
1	black/red
2	yellow
3	red

XR01 - 1-Pin Connector for Intake Air Heater R01 (3-Cyl.)



ATXR01

1-pin connector for intake air heater R01 (3-cyl.)



Intake air heater (3-cyl.)

LEGEND:

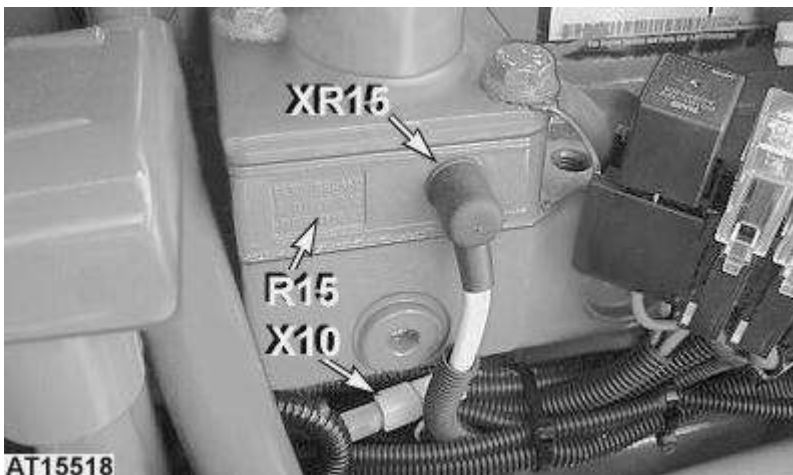
- XR01 1-pin connector for intake air heater R01 (3-cyl.) (white lead)
- R01 Intake air heater (3-cyl.)

XR15 - 1-Pin Connector for Intake Air Heater R15 (4-Cyl.)



ATXR15

1-pin connector for intake air heater R15 (4-cyl.)

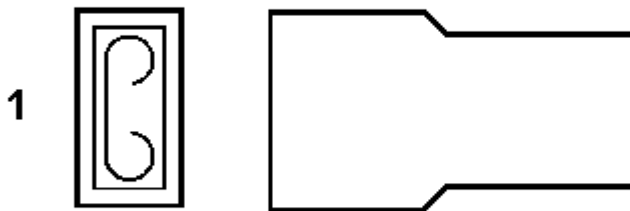


Intake air heater R15 (4-cyl.)

LEGEND:

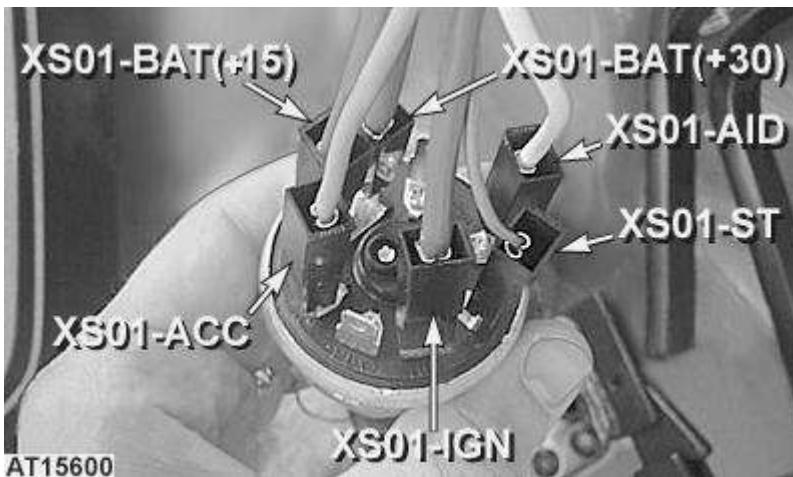
- R15 Intake air heater (4-cyl.)
- X10 1-pin interconnection between wiring harnesses W01 and W10
- XR15 1-pin connector for intake air heater R15 (4-cyl.) (white lead)

XS01 - 6/1-Pin Connectors for Main Switch S01



ATXS01

1-pin connector for main switch S01

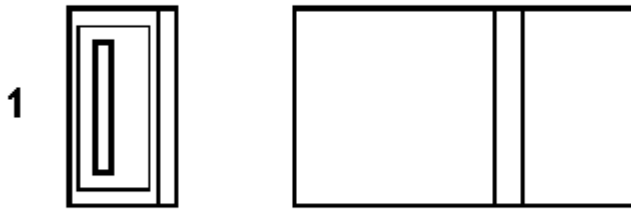


6/1-pin connectors for main switch S01

LEGEND:

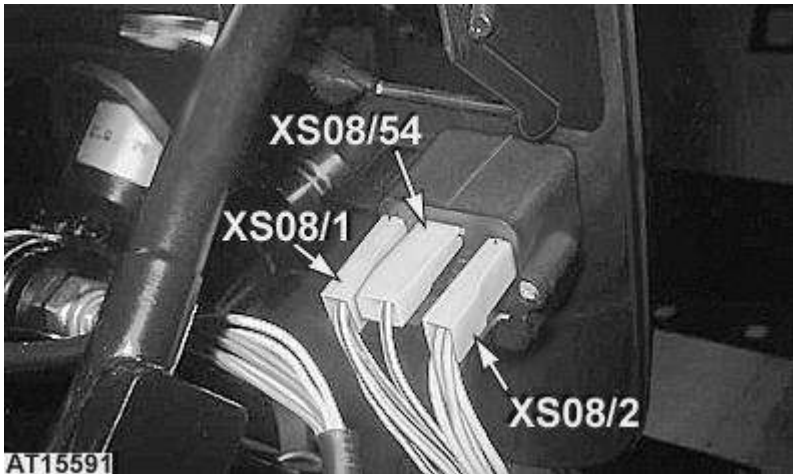
- | | |
|---------------|---|
| XS01-ACC | 1-pin connector for main switch S01 (orange lead) |
| XS01-AID | 1-pin connector for main switch S01 (white lead) |
| XS01-BAT(+15) | 1-pin connector for main switch S01 (red lead) |
| XS01-BAT(+30) | 1-pin connector for main switch S01 (red lead) |
| XS01-IGN | 1-pin connector for main switch S01 (brown lead) |
| XS01-ST | 1-pin connector for main switch S01 (blue/black lead) |

XS08 - 3/1-Pin Connectors for Turn Signal Light Switch S08



ATXS08

1-pin connector for turn signal light switch S08

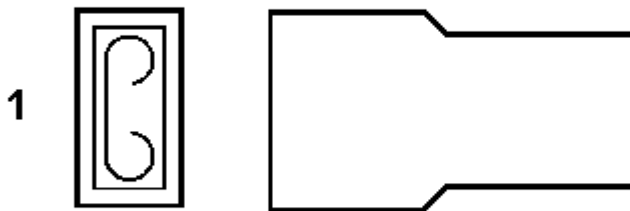


3/1-pin connectors for turn signal light switch S08

LEGEND:

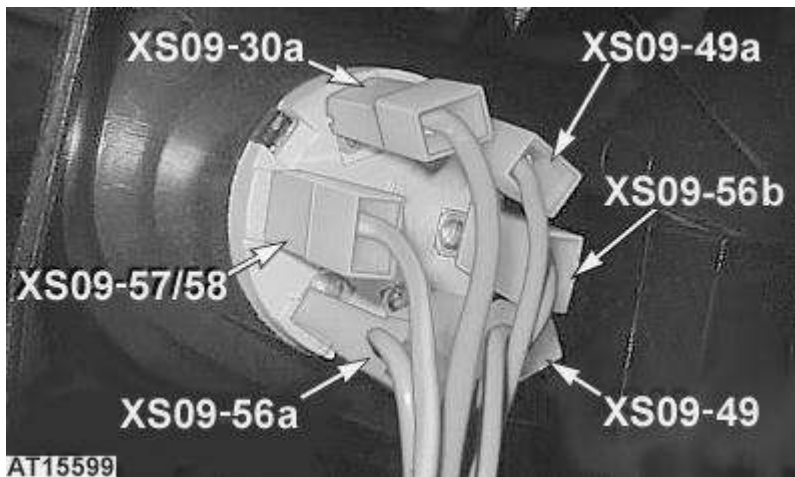
- XS08/1 1-pin connector for turn signal light switch S08 (light blue/black lead)
- XS08/2 1-pin connector for turn signal light switch S08 (light blue lead)
- XS08/54 1-pin connector for turn signal light switch S08 (black/white lead)

XS09 - 6/1-Pin Connectors for Light and Horn Switch S09



ATXS09

1-pin connector for light and horn switch S09

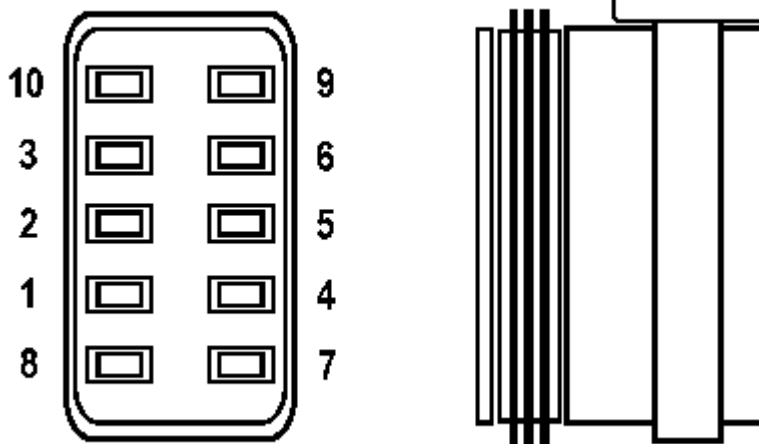


6/1-pin connector for light and horn switch S09

LEGEND:

- XS09-30a 1-pin connector for light and horn switch S09 (orange lead)
- XS09-49 1-pin connector for light and horn switch S09 (violet/black lead)
- XS09-49a 1-pin connector for light and horn switch S09 (violet lead)
- XS09-56a 1-pin connector for light and horn switch S09 (green/black lead)
- XS09-56b 1-pin connector for light and horn switch S09 (grey/black lead)
- XS09-57/58 1-pin connector for light and horn switch S09 (yellow/green lead)

XS11 - 10-Pin Connector for H4 Farm Headlight Switch S11



ATXS11

XS11 - 10-pin connector for H4 farm headlight switch S11



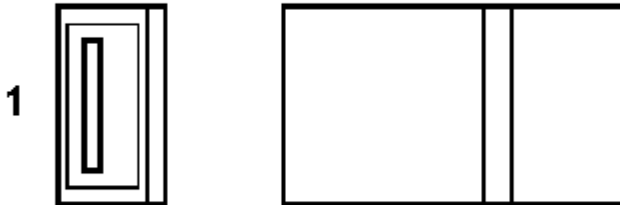
AT15540

XS11 - 10-pin connector for H4 farm headlight switch S11

LEGEND:

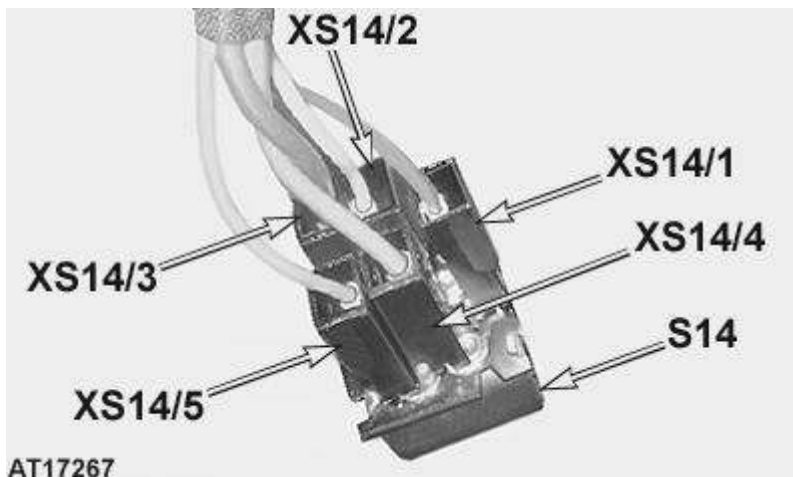
- 1 Grey lead
- 2 Red/grey lead
- 3 Grey/black lead
- 4 Green lead
- 5 Red/green lead
- 6 Green/black lead
- 7 Black lead
- 8 Grey/black lead
- 9 Not used
- 10 Not used
- S11 H4 farm headlight switch
- XS11 10-pin connector for H4 farm headlight switch S11

XS14 - 5/1-Pin Connectors for Fan Switch S14



ATXS14

1-pin connector



5/1-pin connectors for fan switch S14

LEGEND:

- S14 3-speed fan switch
- XS14/1 Black/red lead of 5/1-pin connectors for 3-speed fan switch S14
- XS14/2 Yellow lead of 5/1-pin connectors for 3-speed fan switch S14
- XS14/3 Red lead of 5/1-pin connectors for 3-speed fan switch S14
- XS14/4 Orange lead of 5/1-pin connectors for 3-speed fan switch S14
- XS14/5 Green lead of 5/1-pin connectors for 3-speed fan switch S14

Component information

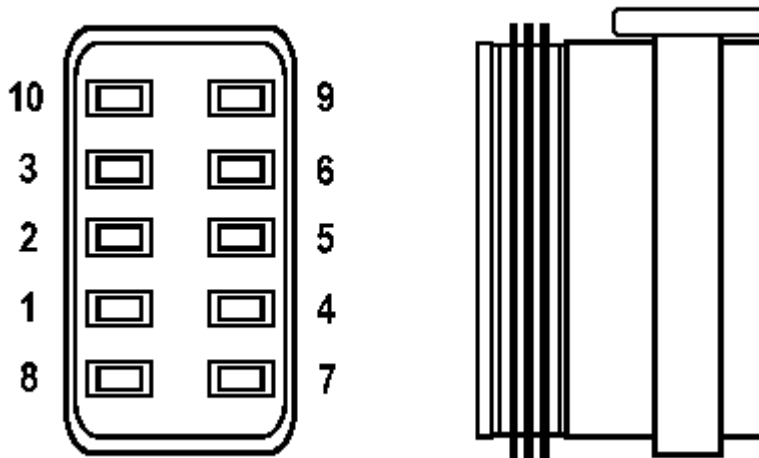
Component information	
Number of pins:	5/1
Connection Point:	S14 - Fan Switch
Wiring harness:	W14 - Fan and Air-Conditioning Wiring Harness

Component information	
Circuit:	SE10A - Fan Motor M07, Diagnostic Schematic and Circuit Test and SE10B - Air-Conditioning System, Diagnostic Schematic and Circuit Test

Plug layout

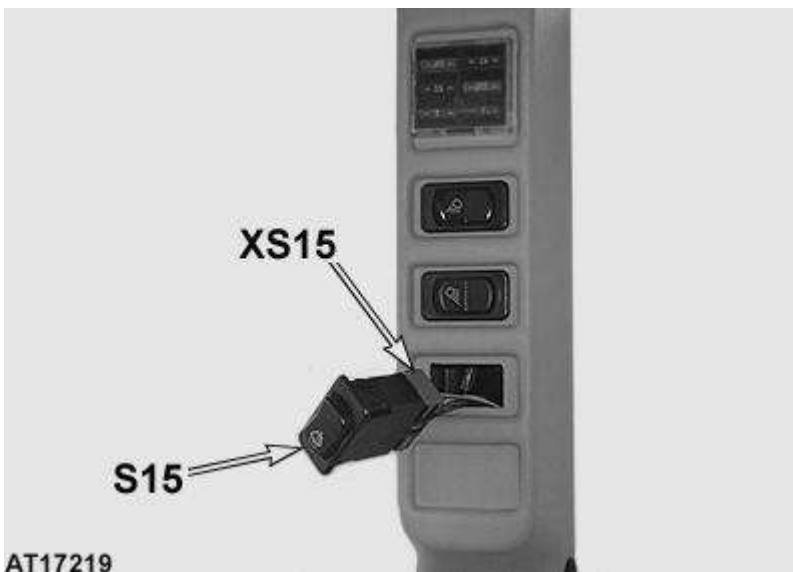
Plug layout	
Pin no.	Wire color
XS14/1	black/red
XS14/2	yellow
XS14/3	red
XS14/4	orange
XS14/5	green

XS15 - 10-Pin Connector for Switch S15 of Windshield Wiper and Pump of Washer System



ATXS15

XS15 - 10-pin connector for switch S15 of windshield wiper and pump of washer system



AT17219

XS15 - 10-pin connector for switch S15 of windshield wiper and pump of washer system

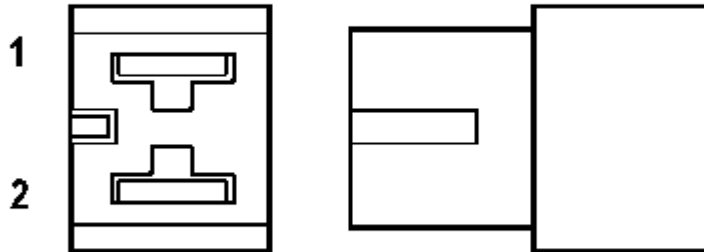
Component information

Component information	
Number of pins:	10
Connection Point:	S15 - Switch for Windshield Wiper and Pump of Washer System
Wiring harness:	W05 - Cab Wiring Harness
Circuit:	SE11 - Wiper and Washer System, Diagnostic Schematic and Circuit Test

Plug layout

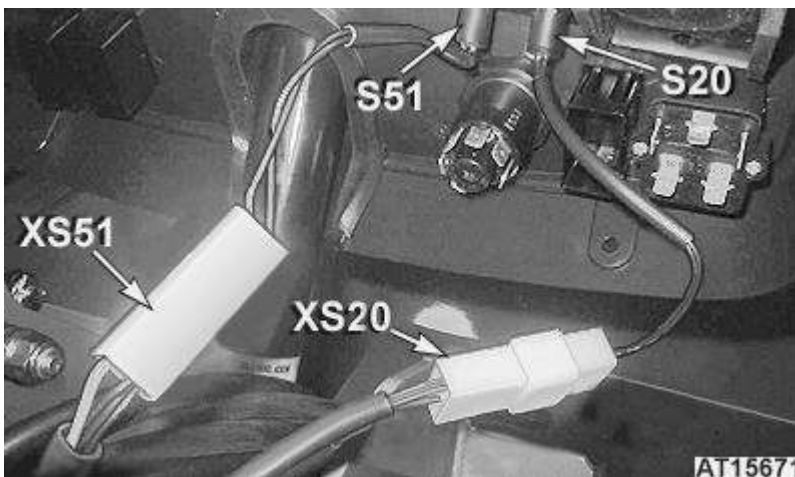
Plug layout	
Pin no.	Wire color
1	blue
2	blue/black
3	brown/white
4	light blue/white
5	not used
6	not used
7	black
8	blue/black
9	not used
10	not used

XS20 - 2-Pin Connector for Calibration Switch S20 of Digital Instrument



ATXS20

2-pin connector for calibration switch S20 of digital instrument



2-pin connector for calibration switch S20 of digital instrument

LEGEND:

- S20 Calibration switch of digital instrument
- S51 Calibration switch of digital instrument (EHM or EHM II)
- XS20 2-pin connector for calibration switch S20 of digital instrument
- XS51 2-pin connector for calibration switch S51 of digital instrument (EHM or EHM II)

Component information

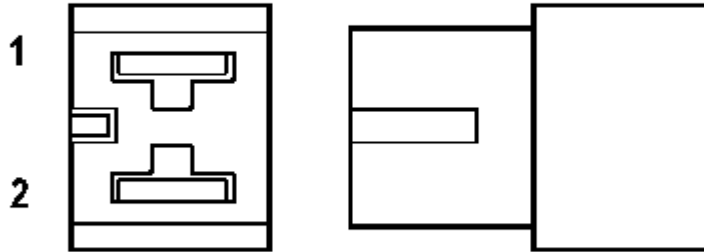
Component information	
Number of pins:	2
Connection Point:	S20 - Calibration Switch of Digital Instrument

Component information	
Wiring harness:	W02 - Main Wiring Harness

Plug layout

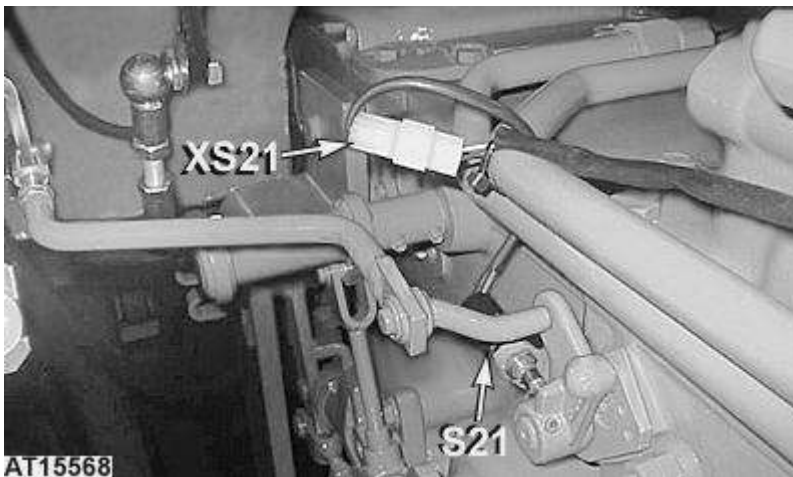
Plug layout	
Pin no.	Wire color
1	white/yellow
2	black

XS21 - 2-Pin Connector for PTO Mode Switch S21



ATXS21

2-pin connector for PTO mode switch S21

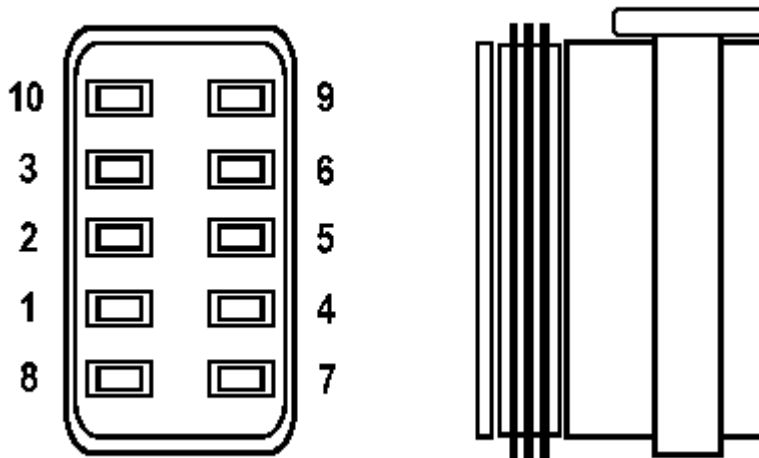


2-pin connector for PTO mode switch S21

LEGEND:

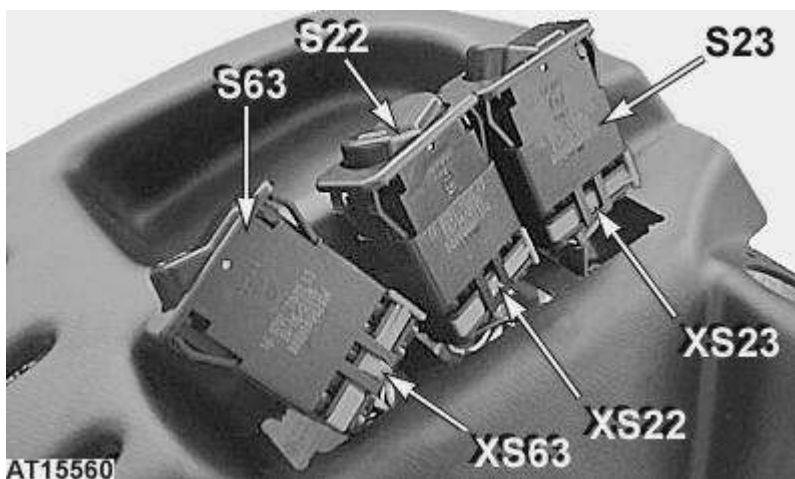
- 1 Grey/green lead
- 2 Black lead
- XS21 2-pin connector for PTO mode switch S21
- S21 PTO mode switch

XS22 - 10-Pin Connector for Differential Lock Switch S22



ATXS22

10-pin connector for differential lock switch S22



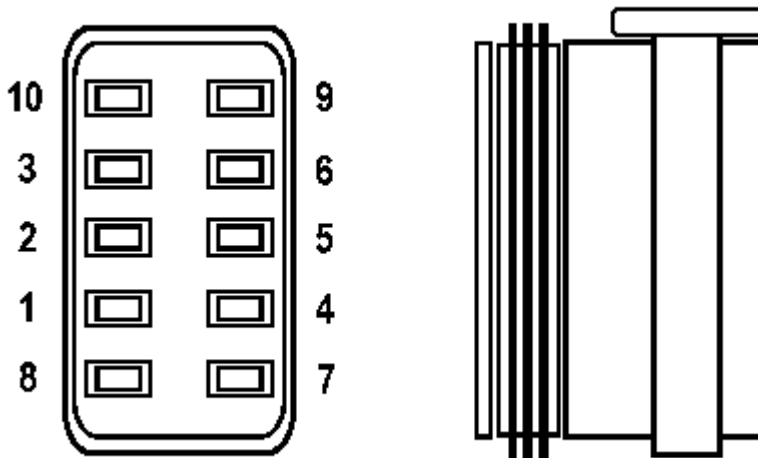
10-pin connector for differential lock switch S22

LEGEND:

- 1 Not used
- 2 Not used
- 3 Not used
- 4 Red/violet lead
- 5 Brown lead
- 6 Violet lead
- 7 Black lead
- 8 Violet lead
- 9 Not used
- 10 Not used
- S22 Differential lock switch
- S23 Reversal switch for allocation (flow divider valve)
- S63 Front-wheel drive switch

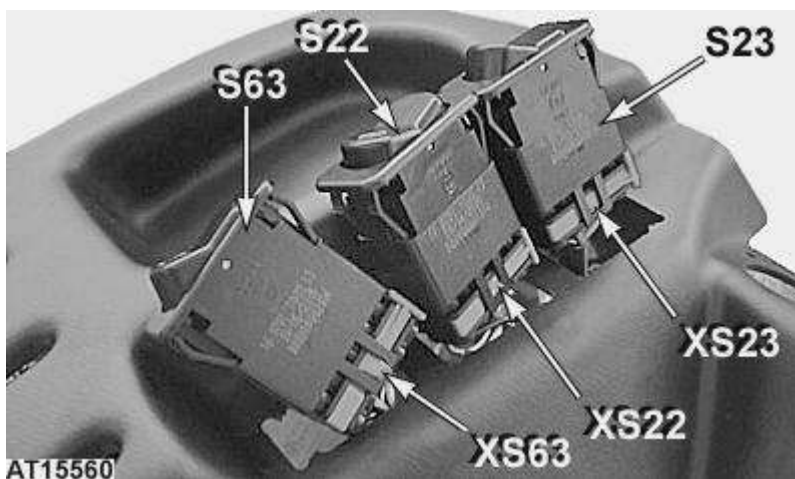
- XS22 10-pin connector for differential lock switch S22
- XS23 10-pin connector for reversal switch for allocation S23 (flow divider valve)
- XS63 10-pin connector for front-wheel drive switch S63

XS23 - 10-Pin Connector for Reversal Switch for Allocation S23 (Flow Divider Valve)



ATXS23

10-pin connector for reversal switch for allocation S23 (flow divider valve)



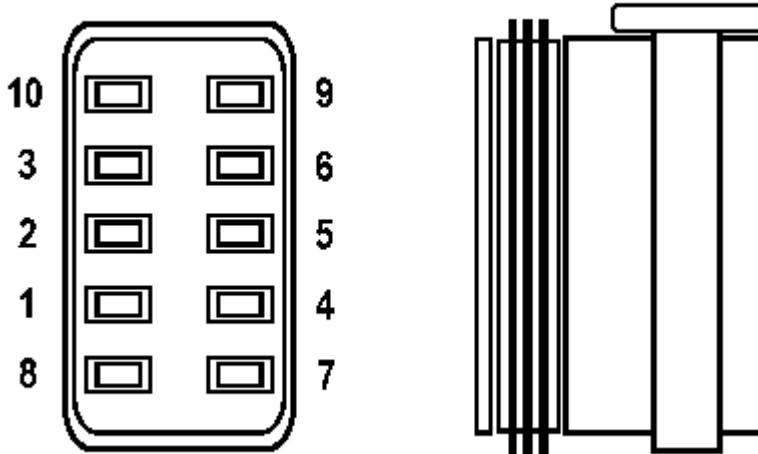
10-pin connector for reversal switch for allocation S23 (flow divider valve)

LEGEND:

- 1 Not used
- 2 White/brown lead
- 3 White lead
- 4 Not used
- 5 White/brown lead
- 6 White/yellow lead
- 7 Black lead
- 8 White lead
- 9 Not used
- 10 Not used
- S22 Differential lock switch
- S23 Reversal switch for allocation (flow divider valve)
- S63 Front-wheel drive switch

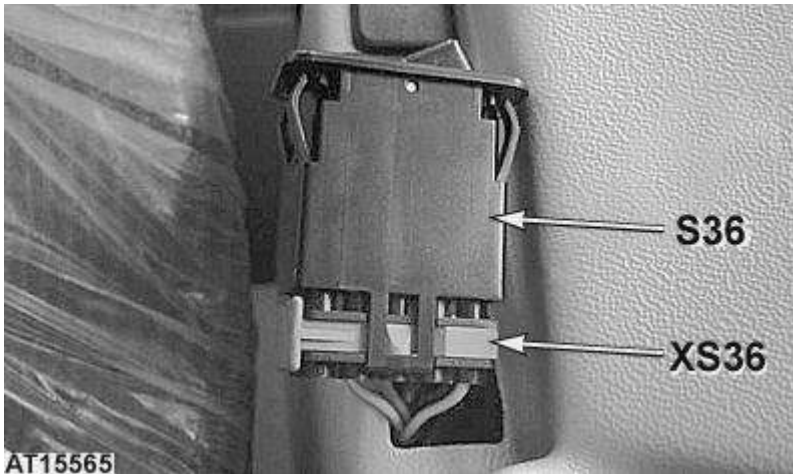
- XS22 10-pin connector for differential lock switch S22
- XS23 10-pin connector for reversal switch for allocation S23 (flow divider valve)
- XS63 10-pin connector for front-wheel drive switch S63

XS36 - 10-Pin Connector for Beacon Light Switch S36



ATXS36

10-pin connector for beacon light switch S36



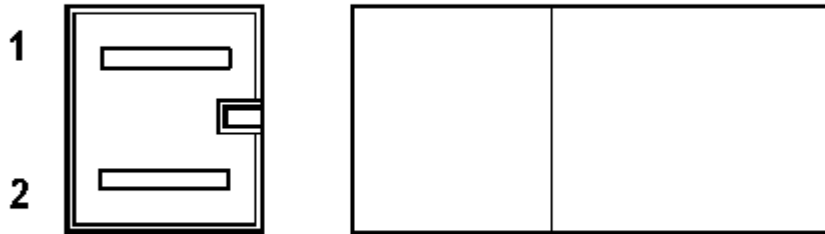
10-pin connector for beacon light switch S36

LEGEND:

- 1 Not used
- 2 Not used
- 3 Not used
- 4 Not used
- 5 Red/green lead
- 6 Pink lead
- 7 Black lead
- 8 Pink lead

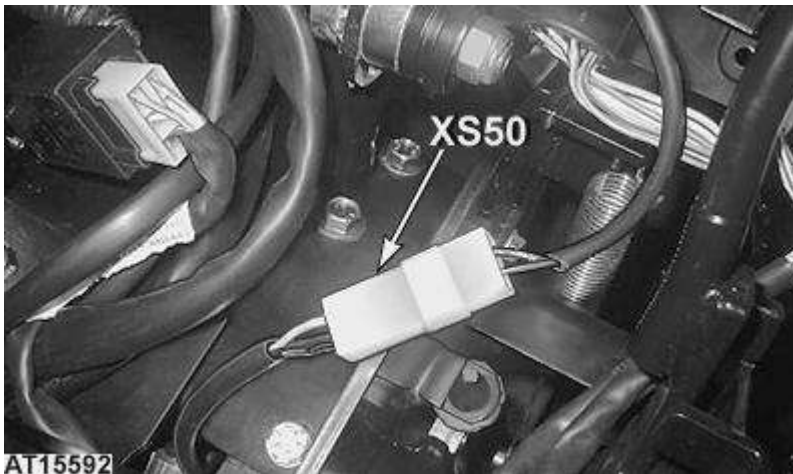
9	Not used
10	Not used
XS36	10-pin connector for beacon light switch S36
S36	Beacon light switch

XS50 - 2-Pin Connector for Calibration Switch S50 (EHM or EHM II)



ATXS50

2-pin connector for calibration switch S50 (EHM or EHM II)



2-pin connector for calibration switch S50 (EHM or EHM II)

LEGEND:

XS50 2-pin connector for calibration switch S50 (EHM or EHM II)

Component information

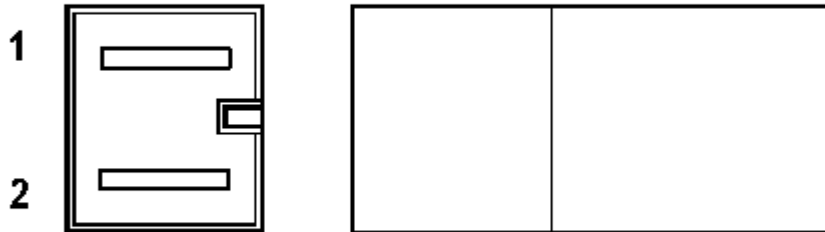
Component information	
Number of pins:	2
Connection Point:	S50 - Calibration Switch (EHM or EHM II)
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)

Component information	
Circuit:	SE26A - Transmission Oil Temperature Sensor and Calibration Switch (EHM), Diagnostic Schematic and Circuit Test or SE26B - Transmission Oil Temperature Sensor and Calibration Switch (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

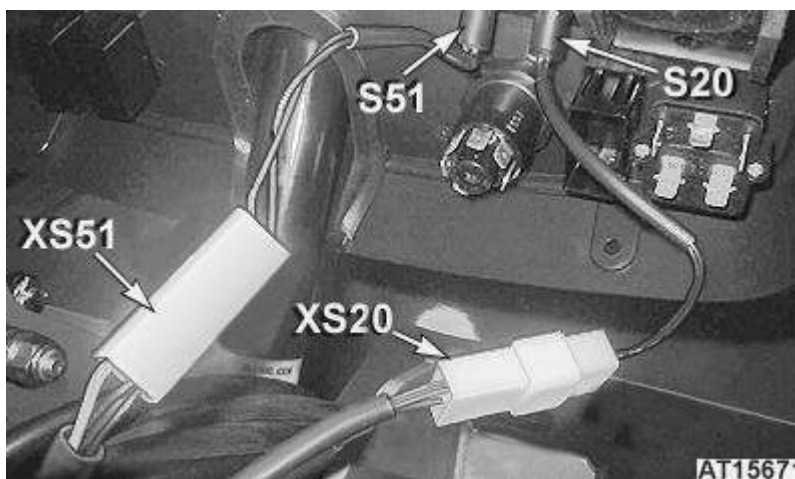
Plug layout	
Pin no.	Wire color
1	pink/yellow
2	black

XS51 - 2-Pin Connector for Calibration Switch S51 of Digital Instrument (EHM or EHM II)



ATXS51

Calibration switch S51 of digital instrument (EHM or EHM II)



Calibration switch S51 of digital instrument (EHM or EHM II)

LEGEND:

- S20 Calibration switch of digital instrument
- S51 Calibration switch of digital instrument (EHM or EHM II)
- XS20 2-pin connector for calibration switch S20 of digital instrument
- XS51 2-pin connector for calibration switch S51 of digital instrument (EHM or EHM II)

Component information

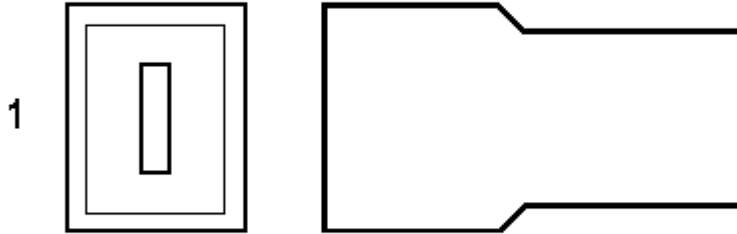
Component information	
Number of pins:	2
Connection Point:	S51 - Calibration Switch of Digital Instrument (EHM or EHM II)

Component information	
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)
Circuit:	SE02G - Calibration Switch of Digital Instrument S51 (EHM or EHM II), Diagnostic Schematic and Circuit Test

Plug layout

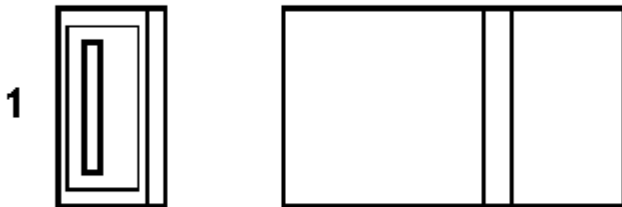
Plug layout	
Pin no.	Wire color
1	violet/yellow
2	black

XS54 - 1-Pin Connector for Declutch Switch S54 (EHM or EHM II)



ATXS541

1-pin connector on declutch switch S54 (EHM or EHM II)



ATXS542

1-pin connector on 24/12 speed transmission wiring harness W03 or W03 II (EHM or EHM II)



1-pin connector for declutch switch S54 (EHM or EHM II)

LEGEND:

- X23 3-pin connector for Hi-Lo switches (S53 and S52)
- XS54 1-pin connector for declutch switch S54

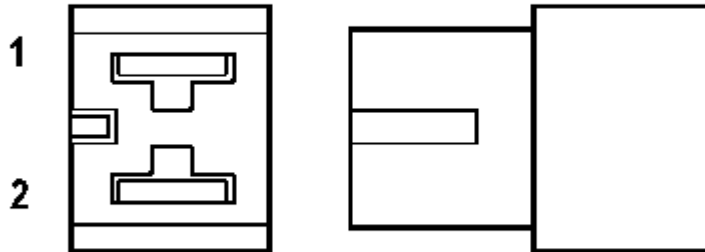
Component information

Component information	
Number of pins:	1
Connection Point:	S54 - Declutch Switch on Range Shift Lever (EHM or EHM II)
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness (EHM) or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)
Circuit:	On EHM System: SE26A - Declutch Switch on Range Shift Lever (EHM), Diagnostic Schematic and Circuit Test or SE26A - Reverse Drive Lever (EHM), Diagnostic Schematic and Circuit Test On EHM II System: SE26B - Declutch Switch on Range Shift Lever (EHM II), Diagnostic Schematic and Circuit Test or SE26B - Reverse Drive Lever (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

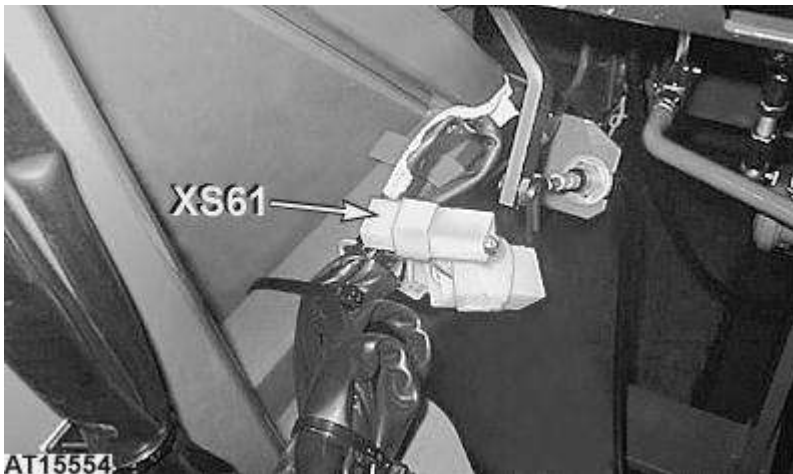
Plug layout	
Pin no.	Wire color
1	light blue/white

XS61 - 2-Pin Connector for Rear Work Light with Switch S61



ATXS61

2-pin connector for rear work light with switch S61

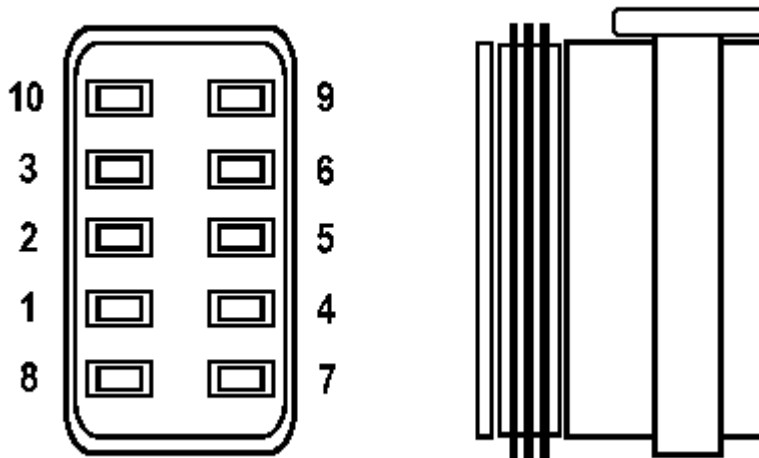


2-pin connector for rear work light with switch S61

LEGEND:

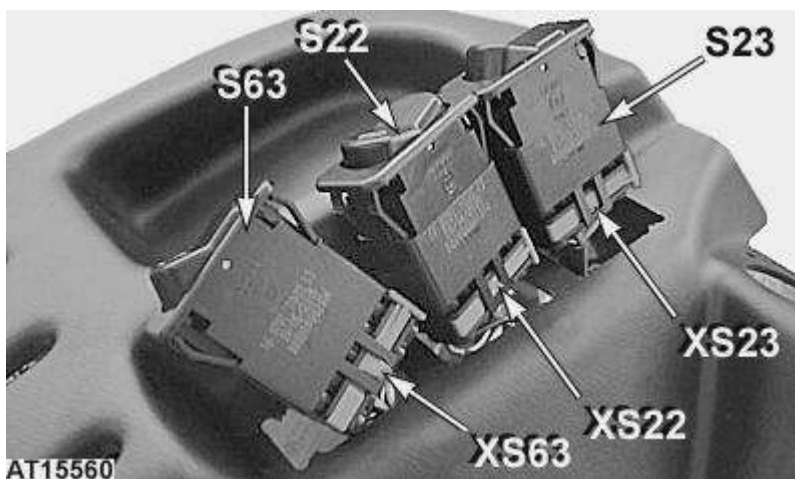
- 1 Brown/yellow lead
- 2 Black lead
- XS61 2-pin connector for rear work light with switch S61

XS63 - 10-Pin Connector for Front-Wheel Drive Switch S63



ATXS63

10-pin connector for front-wheel drive switch S63



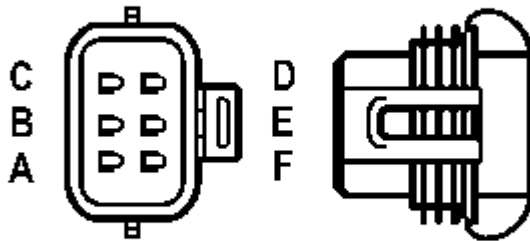
10-pin connector for front-wheel drive switch S63

LEGEND:

- 1 Not used
- 2 Brown lead
- 3 Violet/yellow lead
- 4 Grey/yellow lead
- 5 White/red lead
- 6 Not used
- 7 Black lead
- 8 Violet/brown lead
- 9 Not used
- 10 Not used
- S22 Differential lock switch
- S23 Reversal switch for allocation (flow divider valve)
- S63 Front-wheel drive switch

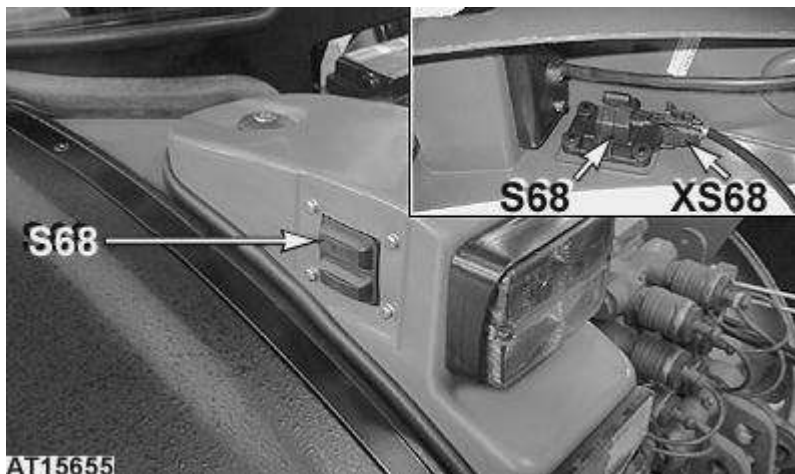
- XS22 10-pin connector for differential lock switch S22
- XS23 10-pin connector for reversal switch for allocation S23 (flow divider valve)
- XS63 10-pin connector for front-wheel drive switch S63

XS68 - 6-Pin Connector for Hitch Remote Control Switch S68 (EHS)



ATXS68

6-pin connector for hitch remote control switch S68 (EHS)



6-pin connector for hitch remote control switch S68 (EHS)

LEGEND:

- S68 Hitch remote control switch (EHS)
- XS68 6-pin connector for hitch remote control switch S68 (EHS)

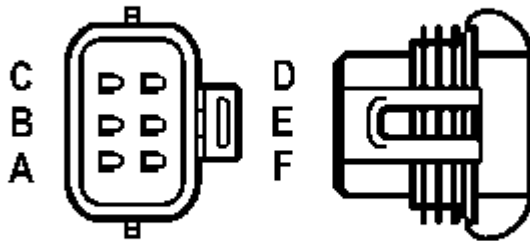
Component information

Component information	
Number of pins:	6
Connection Point:	S68 - Hitch Remote Control Switch (EHS)
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS)
Circuit:	SE15A - Hitch Remote Control Switch S68 (EHS), Diagnostic Schematic and Circuit Test

Plug layout

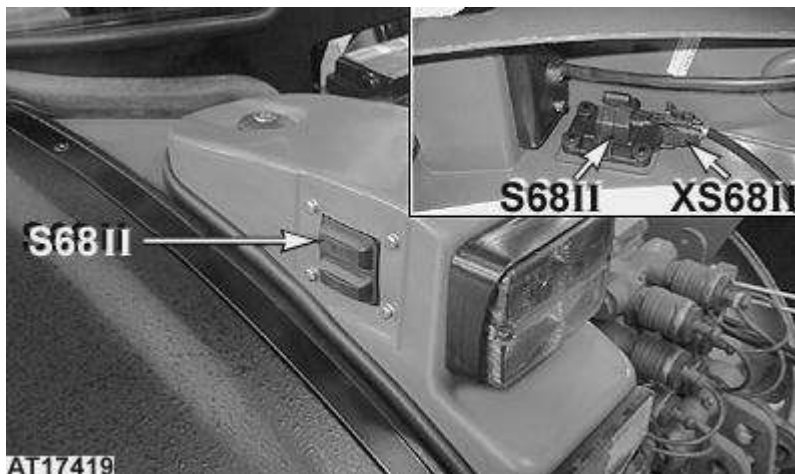
Plug layout	
Pin no.	Wire color
A	brown
B	not used
C	white
D	yellow
E	not used
F	green

XS68 II - 6-Pin Connector for Hitch Remote Control Switch S68 II (EHS II)



ATXS68

6-pin connector for hitch remote control switch S68 II (EHS II)



6-pin connector for hitch remote control switch S68 II (EHS II)

LEGEND:

- S68 II Hitch remote control switch (EHS II)
- XS68 II 6-pin connector for hitch remote control switch S68 II (EHS II)

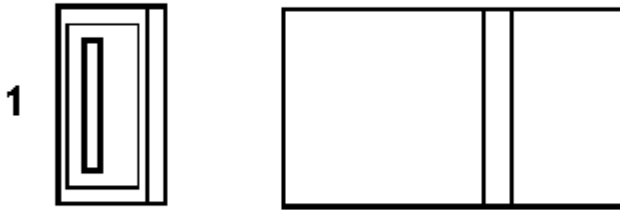
Component information

Component information	
Number of pins:	6
Connection Point:	S68 II - Hitch Remote Control Switch (EHS II)
Wiring harness:	W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15B - Hitch Remote Control Switch S68 II (EHS II), Diagnostic Schematic and Circuit Test

Plug layout

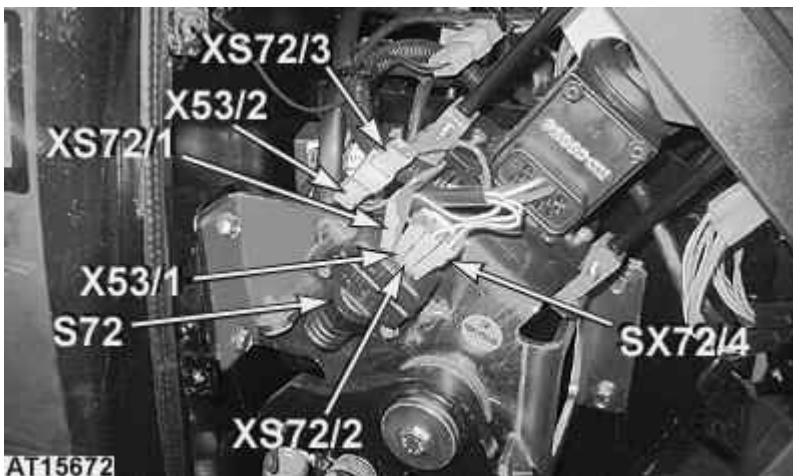
Plug layout	
Pin no.	Wire color
A	brown
B	not used
C	white
D	yellow
E	not used
F	green

XS72 - 4/1-Pin Connectors for Clutch Pedal Switch S72 (EHM or EHM II)

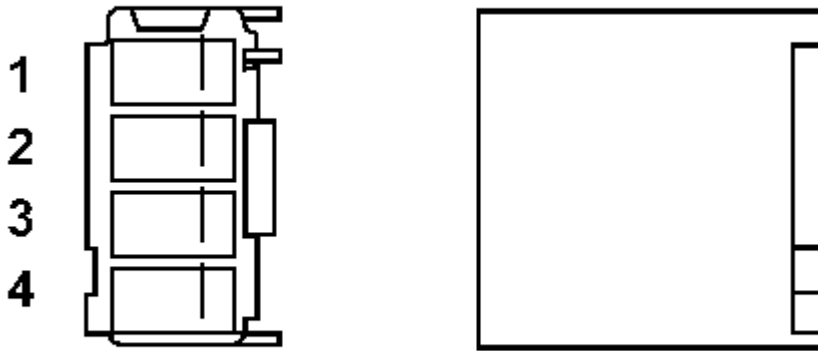


ATXS72

XS72 (EHM)

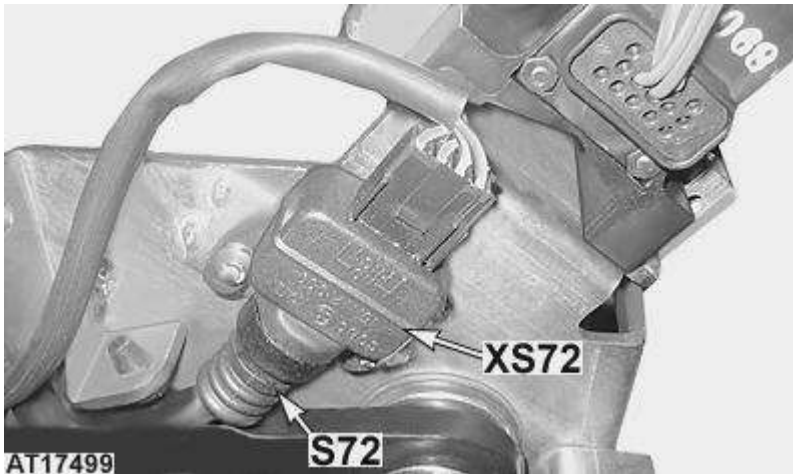


XS72 (EHM)



ATXS72II

XS72 (EHM II)



XS72 (EHM II)

LEGEND:

- S72 Clutch pedal switch (EHM or EHM II)
- X53 1-pin interconnection between clutch pedal switch S72 (EHM or EHM II) and wiring harness W12
- XS72 4/1-pin connectors for clutch pedal switch S72 (EHM or EHM II)

Component information

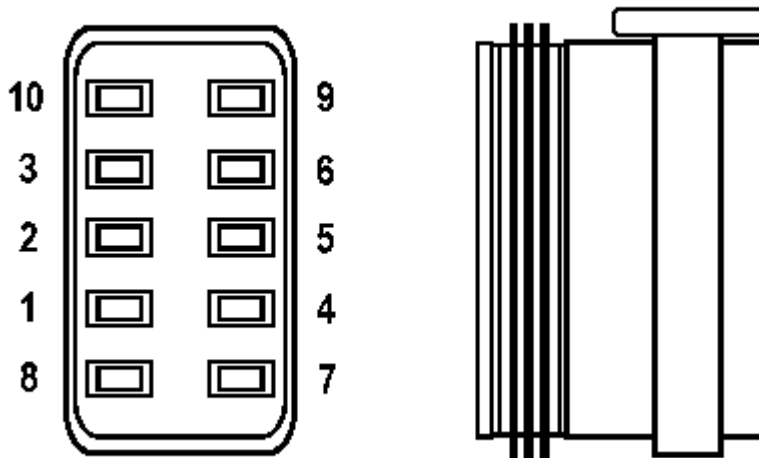
Component information	
Number of pins:	4/1
Connection Point:	S72 - Clutch Pedal Switch (EHM or EHM II)
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)

Component information	
Circuit:	SE26A - Clutch Pedal Switch (EHM), Diagnostic Schematic and Circuit Test or SE26B - Clutch Pedal Switch (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

Plug layout	
Pin no.	Wire color
XS72/1	yellow/red
XS72/2	light blue
XS72/3	blue/red
XS72/4	white/red

XS92/1 - 10-Pin Connector for Front Work Light Switch S92/1



ATXS92

XS92/1 - 10-pin connector for front work light switch S92/1



XS92/1 - 10-pin connector for front work light switch S92/1

LEGEND:

- S92/1 Front work light switch
- XS92/1 10-pin connector for front work light switch S92/1

Component information

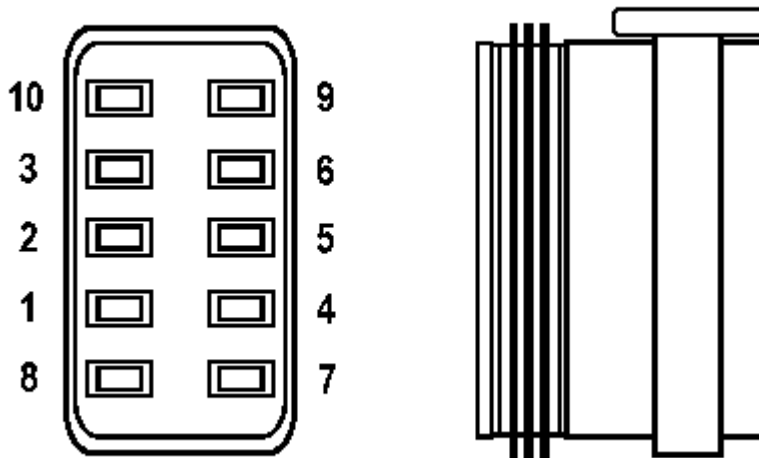
Component information	
Number of pins:	10
Connection Point:	S92/1 - Front Work Light Switch
Wiring harness:	W05 - Cab Wiring Harness

Component information	
Circuit:	SE07B - Front Work Lights E18 (Cab Only), Diagnostic Schematic and Circuit Test

Plug layout

Plug layout	
Pin no.	Wire color
1	not used
2	violet
3	grey
4	not used
5	orange/red
6	yellow/red
7	black
8	orange/red
9	not used
10	not used

XS92/2 - 10-Pin Connector for Rear Work Light Switch S92/2



ATXS92

XS92/2 - 10-pin connector for rear work light switch S92/2



XS92/2 - 10-pin connector for rear work light switch S92/2

LEGEND:

- S92/2 Rear work light switch
- XS92/2 10-pin connector for rear work light switch S92/2

Component information

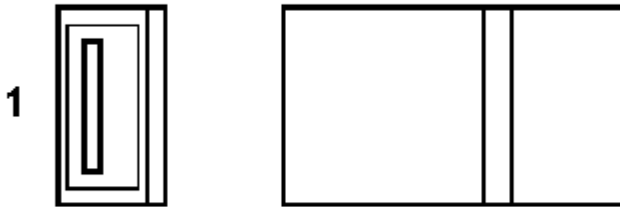
Component information	
Number of pins:	10
Connection Point:	S92/2 - Rear Work Light Switch
Wiring harness:	W05 - Cab Wiring Harness

Component information	
Circuit:	SE07B - Rear Work Lights E11 (Cab Only), Diagnostic Schematic and Circuit Test

Plug layout

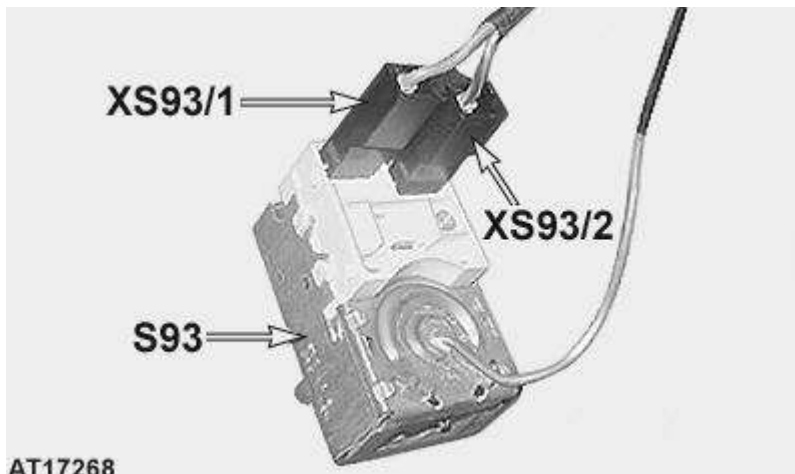
Plug layout	
Pin no.	Wire color
1	not used
2	blue/green
3	green
4	not used
5	blue/green
6	green
7	black
8	green
9	not used
10	not used

XS93 - 2/1-Pin Connectors for Heating and Air-Conditioning Switch S93



ATXS93

1-pin connector



2/1-pin connectors for heating and air-conditioning switch S93

LEGEND:

- S93 Air-conditioning switch
- XS93/1 Green lead of 2/1-pin connector for heating and air-conditioning switch S93
- XS93/2 Black/green lead of 2/1-pin connector for heating and air-conditioning switch S93

Component information

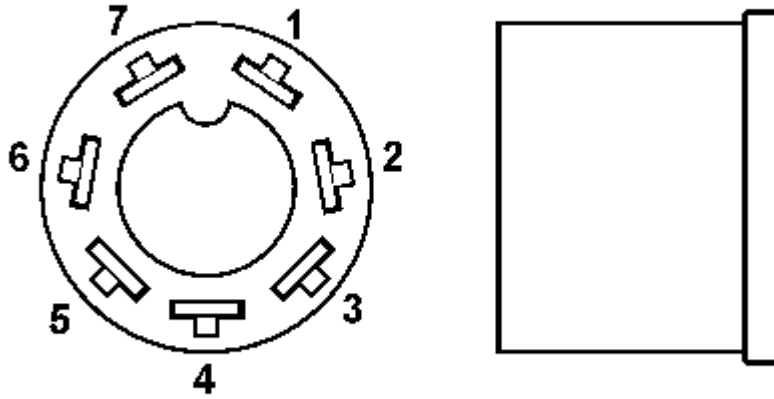
Component information	
Number of pins:	2/1
Connection Point:	XS93 - 2/1-Pin Connectors for Heating and Air-Conditioning Switch S93

Component information	
Wiring harness:	W14 - Fan and Air-Conditioning Wiring Harness
Circuit:	SE10B - Air-Conditioning System, Diagnostic Schematic and Circuit Test

Plug layout

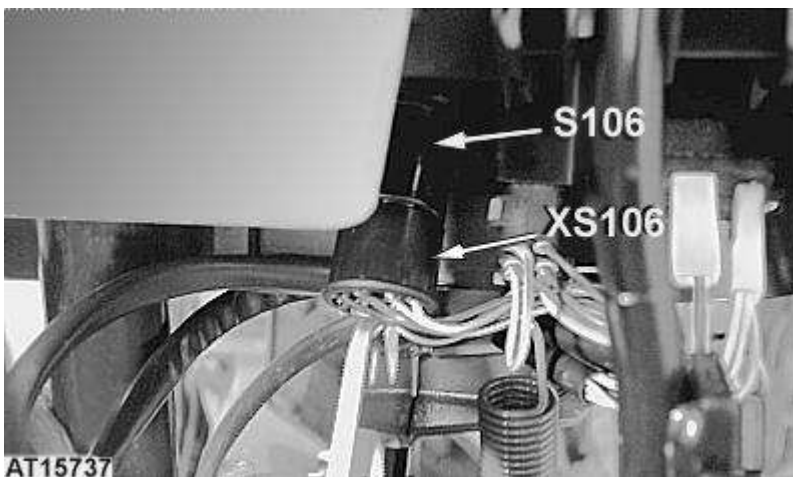
Plug layout	
Pin no.	Wire color
XS93/1	green
XS93/2	black/green

XS106 - 7-Pin Connector for Hazard Warning Light Switch S106



ATXS106

7-pin connector for hazard warning light switch S106

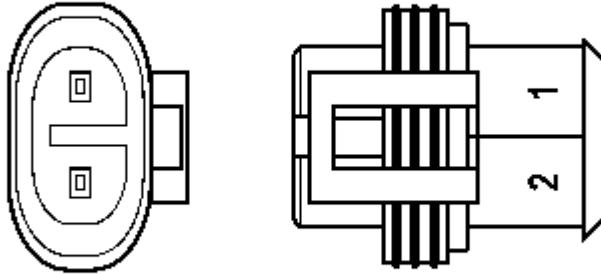


7-pin connector for hazard warning light switch S106

LEGEND:

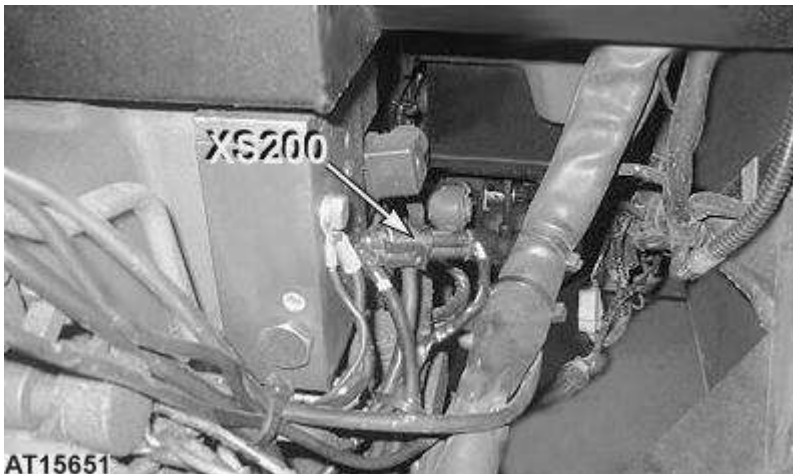
- 1 Brown/green lead (+15)
- 2 White/yellow lead
- 3 Red/green lead (+30)
- 4 White/brown lead (49)
- 5 Black/white lead (49A)
- 6 Light blue lead (L)
- 7 Light blue/black lead (R)
- XS106 7-pin connector for hazard warning light switch S106
- S106 Hazard warning light switch

XS200 - 2-Pin Connector for Raise Limiting Switch S200 (EHS)



ATXS200

2-pin connector for raise limiting switch S200 (EHS)



2-pin connector for raise limiting switch S200 (EHS)

LEGEND:

XS200 2-pin connector for raise limiting switch S200 (EHS)

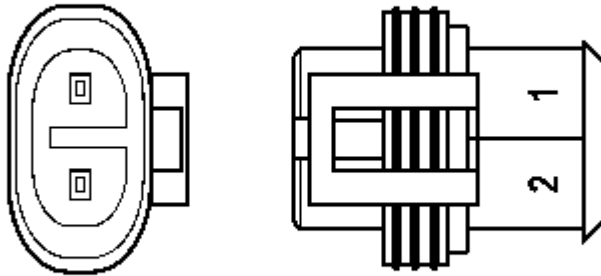
Component information

Component information	
Number of pins:	2
Connection Point:	S200 - Raise Limiting Switch (EHS)
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS)
Circuit:	SE15A - Raise Limiting Switch S200 (EHS), Diagnostic Schematic and Circuit Test

Plug layout

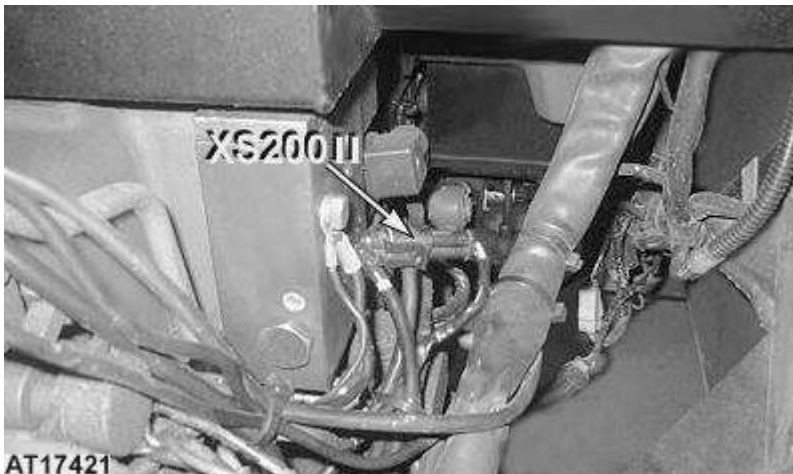
Plug layout	
Pin no.	Wire color
1	white
2	brown

XS200 II - 2-Pin Connector for Raise Limiting Switch S200 II (EHS II)



ATXS200

2-pin connector for raise limiting switch S200 II (EHS II)



2-pin connector for raise limiting switch S200 II (EHS II)

LEGEND:

XS200 II 2-pin connector for raise limiting switch S200 II (EHS II)

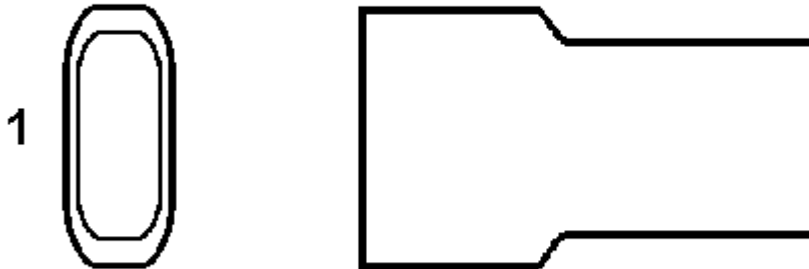
Component information

Component information	
Number of pins:	2
Connection Point:	S200 II - Raise Limiting Switch (EHS II)
Wiring harness:	W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15B - Raise Limiting Switch S200 II (EHS II), Diagnostic Schematic and Circuit Test

Plug layout

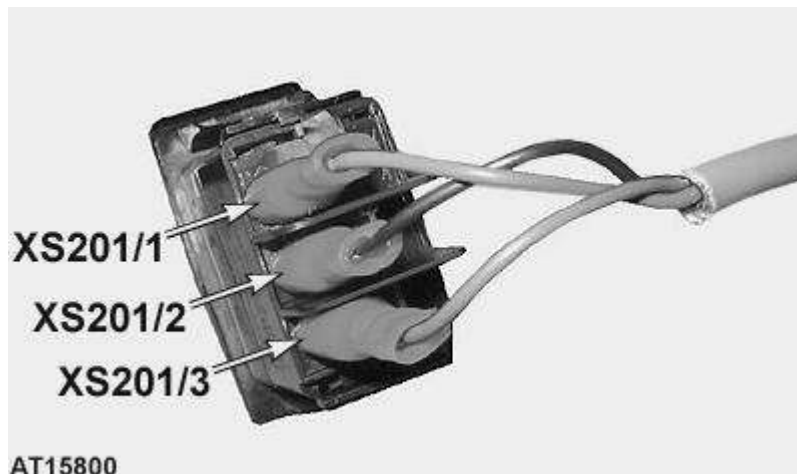
Plug layout	
Pin no.	Wire color
1	white
2	brown

XS201 - 3/1-Pin Connector for Raise/Lower Switch S201 (EHS)



ATXS201

3/1-pin connector for raise/lower switch S201 (EHS)



AT15800

3/1-pin connector for raise/lower switch S201 (EHS)

LEGEND:

XS201 3/1-pin connector for raise/lower switch S201 (EHS)

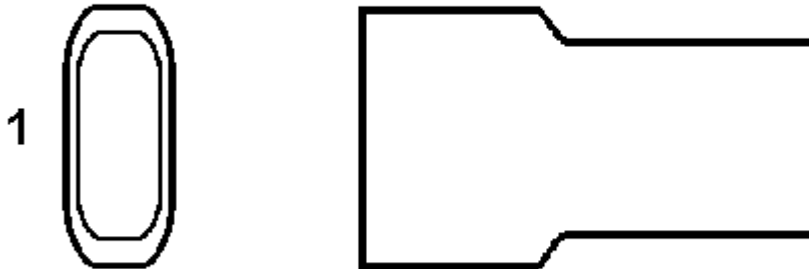
Component information

Component information	
Number of pins:	3
Connection Point:	S201 - Raise/Lower Switch (EHS)
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS)
Circuit:	SE15A - Raise Limiting Switch S200 (EHS), Diagnostic Schematic and Circuit Test

Plug layout

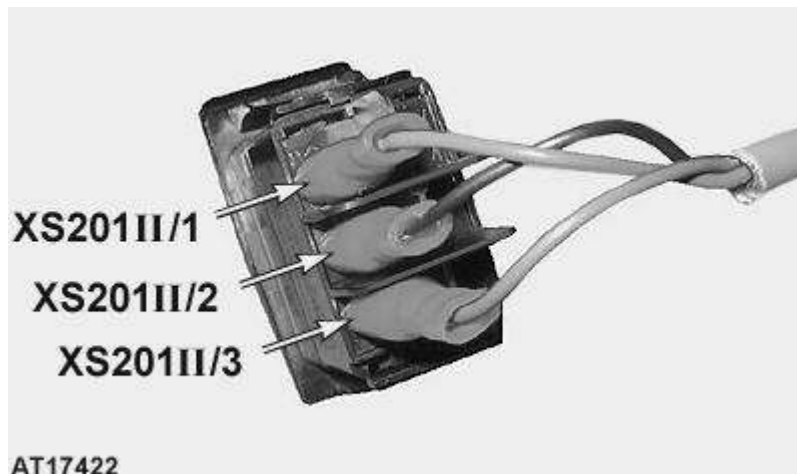
Plug layout	
Pin no.	Wire color
XS201/1	yellow/green
XS201/2	green
XS201/3	white

XS201 II - 3/1-Pin Connector for Raise/Lower Switch S201 II (EHS II)



ATXS201

3/1-pin connector for raise/lower switch S201 II (EHS II)



3/1-pin connector for raise/lower switch S201 II (EHS II)

LEGEND:

XS201 II 3/1-pin connector for raise/lower switch S201 II (EHS II)

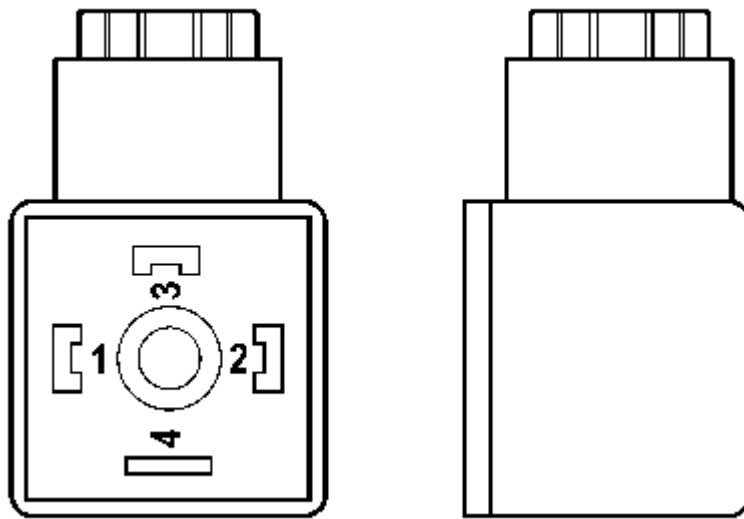
Component information

Component information	
Number of pins:	3
Connection Point:	S201 II - Raise/Lower Switch (EHS II)
Wiring harness:	W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15B - Raise/Lower Switch S201 II (EHS II), Diagnostic Schematic and Circuit Test

Plug layout

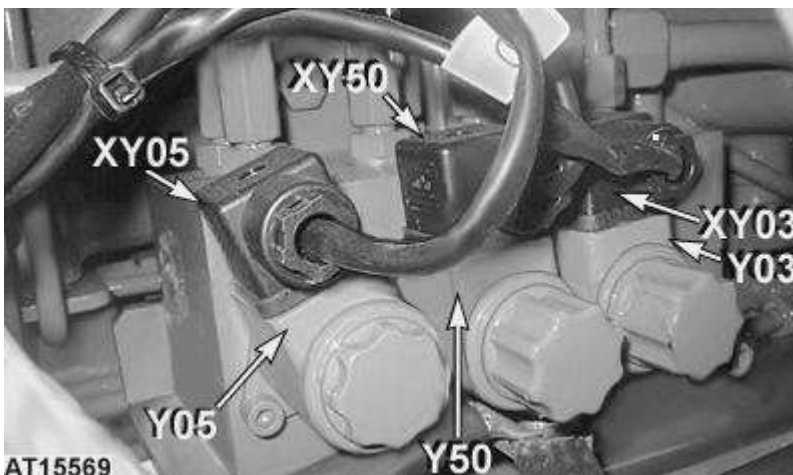
Plug layout	
Pin no.	Wire color
XS201 II/2	brown
XS201 II/3	white
XS201 II/8	green

XY03 - 4-Pin Connector for Front-Wheel Drive Solenoid Valve Y03



ATXY03

4-pin connector for front-wheel drive solenoid valve Y03

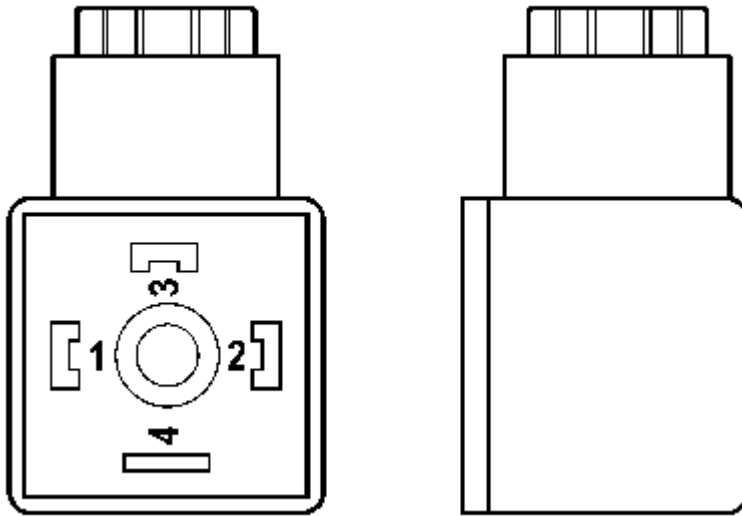


4-pin connector for front-wheel drive solenoid valve Y03

LEGEND:

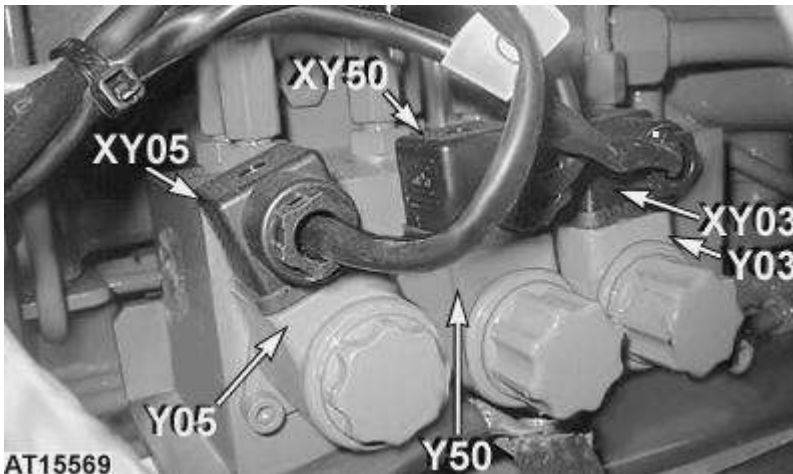
- 1 Black lead
- 2 Pink/black lead
- 3 Not used
- 4 Not used
- XY03 4-pin connector for front-wheel drive solenoid valve Y03
- XY05 4-pin connector for differential lock solenoid valve Y05
- XY50 4-pin connector for electro-hydraulic Hi-Lo solenoid valve Y50
- Y03 Front-wheel drive solenoid valve
- Y05 Differential lock solenoid valve
- Y50 Electro-hydraulic Hi-Lo solenoid valve (24/24-speed transmission only)

XY05 - 4-Pin Connector for Differential Lock Solenoid Valve Y05



ATXY05

4-pin connector for differential lock solenoid valve Y05



4-pin connector for differential lock solenoid valve Y05

LEGEND:

- XY03 4-pin connector for front-wheel drive solenoid valve Y03
- XY05 4-pin connector for differential lock solenoid valve Y05
- XY50 4-pin connector for electro-hydraulic Hi-Lo solenoid valve Y50
- Y03 Front-wheel drive solenoid valve
- Y05 Differential lock solenoid valve
- Y50 Electro-hydraulic Hi-Lo solenoid valve (24/24-speed transmission only)

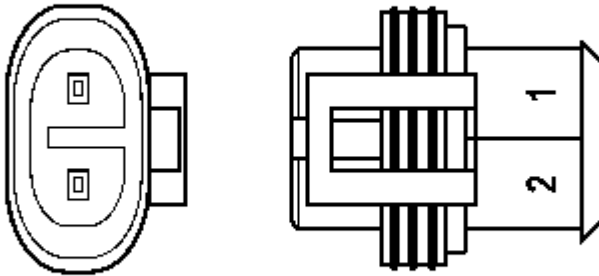
Component information

Component information	
Number of pins:	4
Connection Point:	Y05 - Differential Lock Solenoid Valve
Wiring harness:	W02 - Main Wiring Harness
Circuit:	SE26A - Differential Lock (EHM), Diagnostic Schematic and Circuit Test

Plug layout

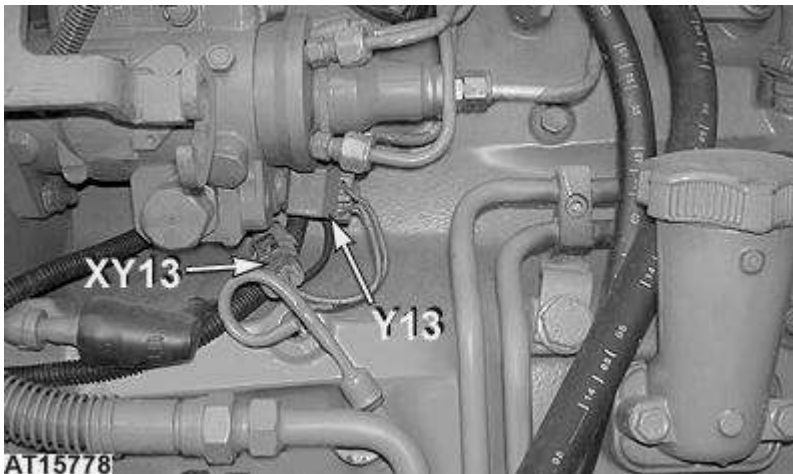
Plug layout	
Pin no.	Wire color
1	black
2	violet
3	not used
4	not used

XY13 - 2-Pin Connector for Fuel Shut-Off Solenoid Valve Y13



ATXY13

2-pin connector for fuel shut-off solenoid valve Y13

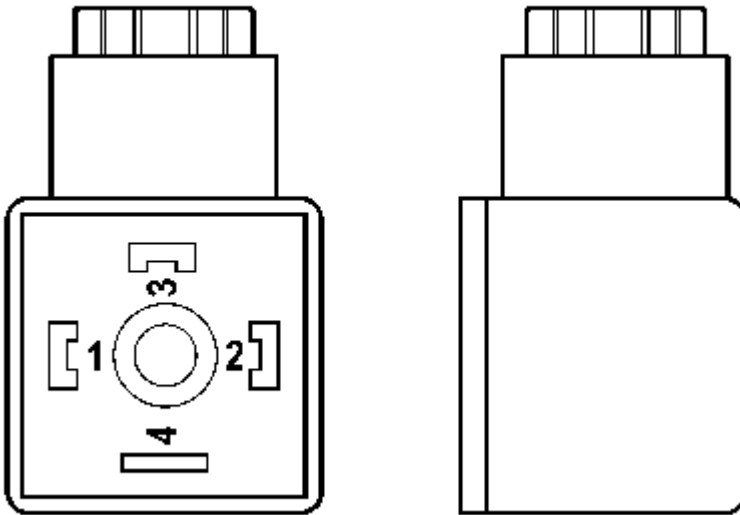


21-pin connector for fuel shut-off solenoid valve Y13

LEGEND:

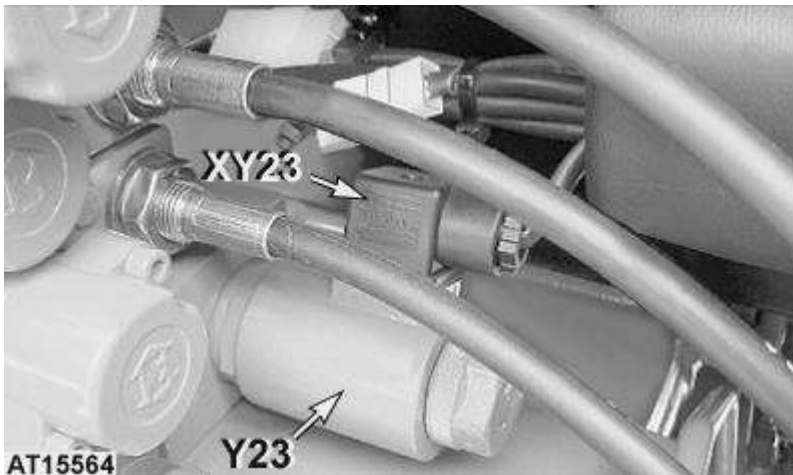
- 1 Lead
- 2 Lead
- XY13 2-pin connector for fuel shut-off solenoid valve Y13
- Y13 Fuel shut-off solenoid valve

XY23 - 4-Pin Connector for Flow Divider Solenoid Valve Y23



ATXY23

4-pin connector for flow divider solenoid valve Y23

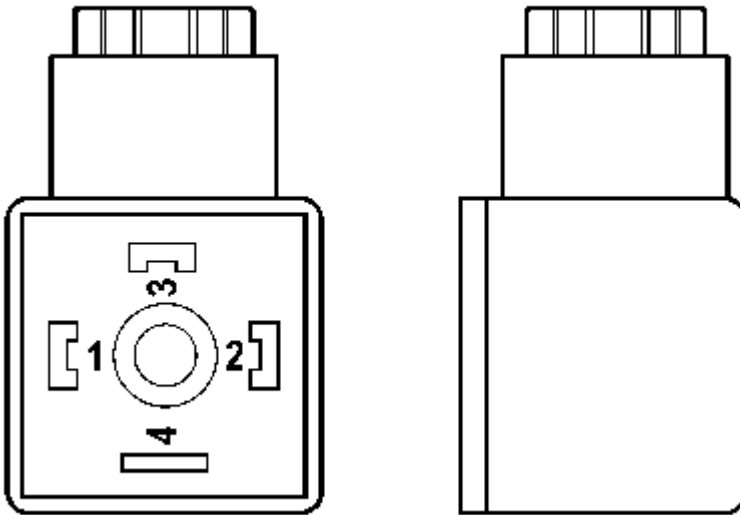


4-pin connector for flow divider solenoid valve Y23

LEGEND:

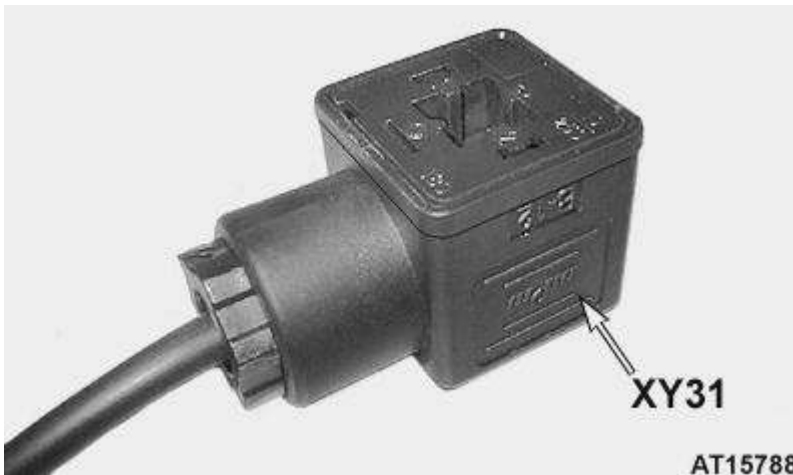
- 1 Black lead
- 2 White/yellow lead
- 3 Not used
- 4 Not used
- XY23 4-pin connector for flow divider solenoid valve Y23
- Y23 Flow divider solenoid valve

XY31 - 4-Pin Connector for Trailer Brake Solenoid Valve Y31



ATXY31

4-pin connector for trailer brake solenoid valve Y31

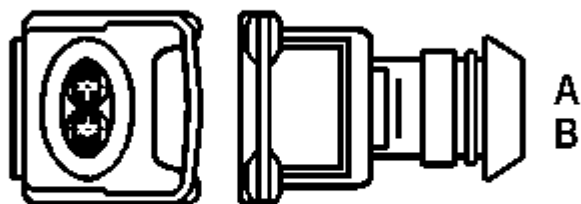


4-pin connector for trailer brake solenoid valve Y31

LEGEND:

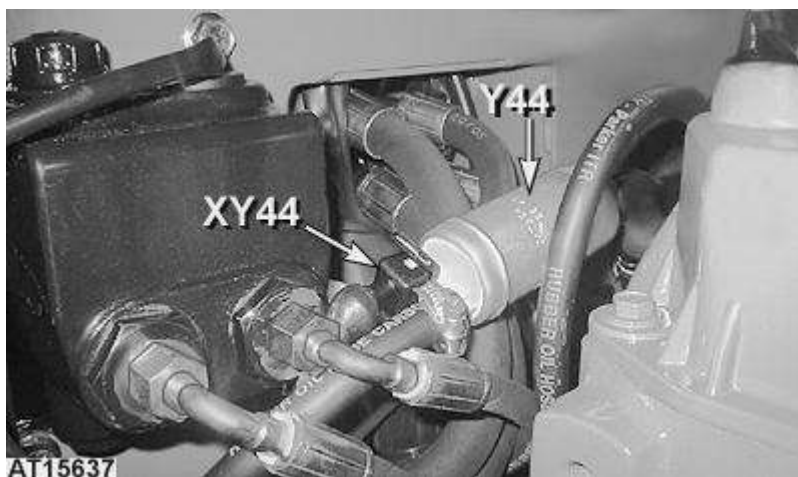
- 1 Black lead
- 2 White/blue lead
- 3 Not used
- 4 Not used
- XY31 4-pin connector for trailer brake solenoid valve Y31

XY44 - 2-Pin Connector for Fuel Transfer Pump Y44



ATXY44

2-pin connector for fuel transfer pump Y44

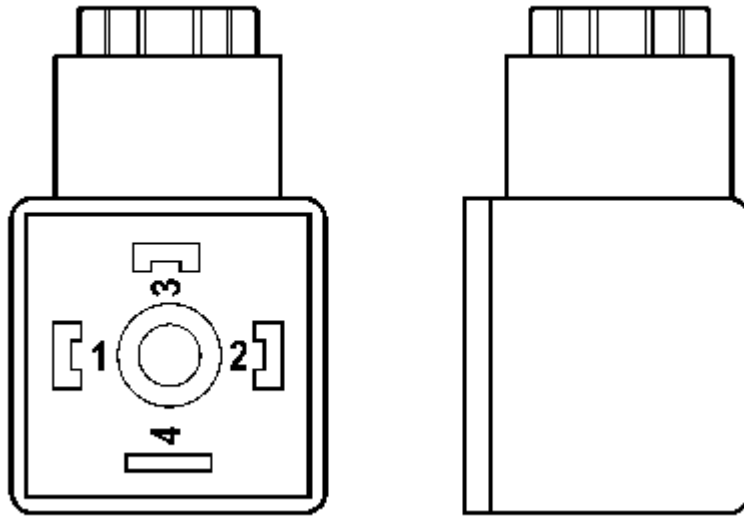


Fuel transfer pump

LEGEND:

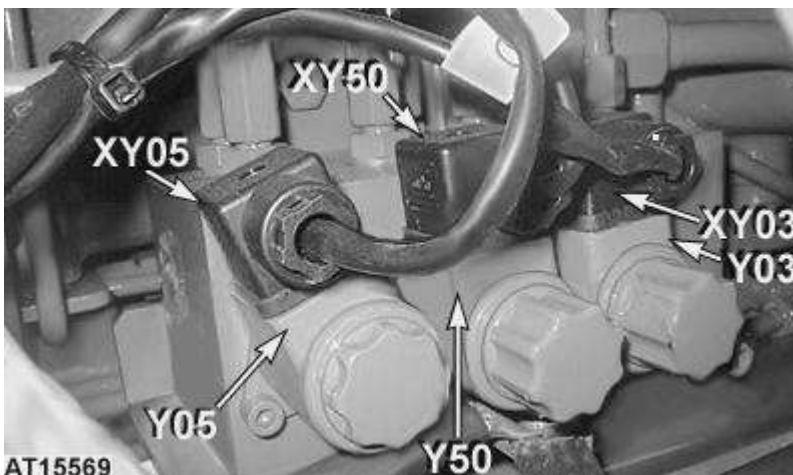
- A Orange lead
- B Black lead
- XY44 2-pin connector for fuel transfer pump Y44
- Y44 Fuel transfer pump

XY50 - 4-Pin Connector for Electro-Hydraulic Hi-Lo Solenoid Valve Y50



ATXY50

4-pin connector for electro-hydraulic Hi-Lo solenoid valve Y50



AT15569

4-pin connector for electro-hydraulic Hi-Lo solenoid valve Y50

LEGEND:

- XY03 4-pin connector for front-wheel drive solenoid valve Y03
- XY05 4-pin connector for differential lock solenoid valve Y05
- XY50 4-pin connector for electro-hydraulic Hi-Lo solenoid valve Y50
- Y03 Front-wheel drive solenoid valve
- Y05 Differential lock solenoid valve
- Y50 Electro-hydraulic Hi-Lo solenoid valve (24/24-speed transmission only)

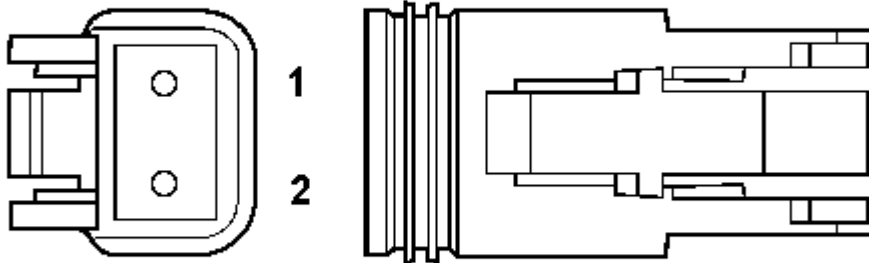
Component information

Component information	
Number of pins:	4
Connection Point:	Y50 - Electro-Hydraulic Hi-Lo Solenoid Valve (24/24-Speed Transmission only)
Wiring harness:	W02 - Main Wiring Harness
Circuit:	SE27 - Electro-Hydraulic Hi-Lo, Diagnostic Schematic and Circuit Test

Plug layout

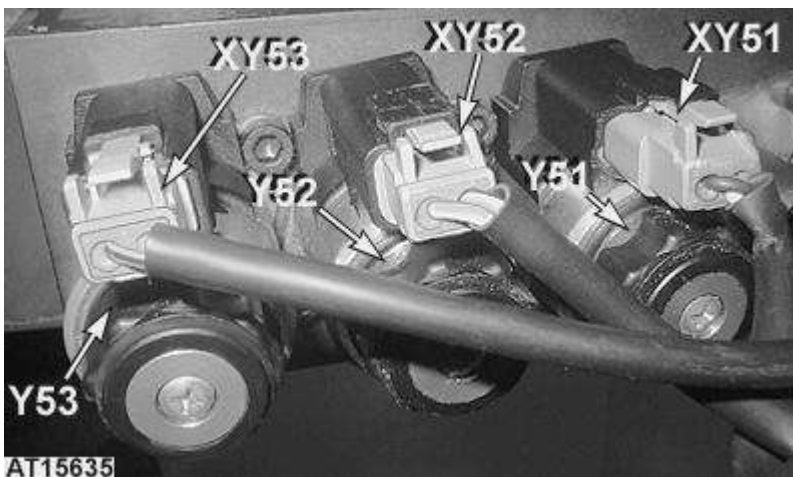
Plug layout	
Pin no.	Wire color
1	black
2	orange/green
3	not used
4	not used

XY51 - 2-Pin Connector for Reverse Clutch Solenoid Valve Y51 (EHM or EHM II)



ATXY51

2-pin connector for reverse clutch solenoid valve Y51 (EHM or EHM II)



2-pin connector for reverse clutch solenoid valve Y51 (EHM or EHM II)

LEGEND:

- XY51 2-pin connector for reverse clutch solenoid valve Y51 (EHM or EHM II)
- XY52 2-pin connector for forward low clutch solenoid valve Y52 (EHM or EHM II)
- XY53 2-pin connector for forward high clutch solenoid valve Y53 (EHM or EHM II)
- Y51 Reverse clutch solenoid valve (EHM or EHM II)
- Y52 Forward low clutch solenoid valve (EHM or EHM II)
- Y53 Forward high clutch solenoid valve (EHM or EHM II)

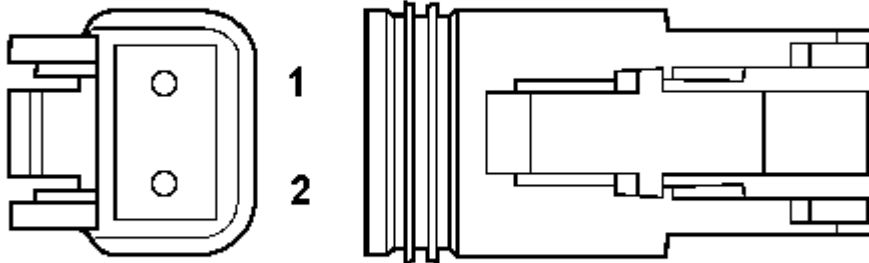
Component information

Component information	
Number of pins:	2
Connection Point:	Y51 - Reverse Clutch Solenoid Valve (EHM or EHM II)
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)
Circuit:	SE26A - Reverse Clutch (EHM), Diagnostic Schematic and Circuit Test or SE26B - Reverse Clutch (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

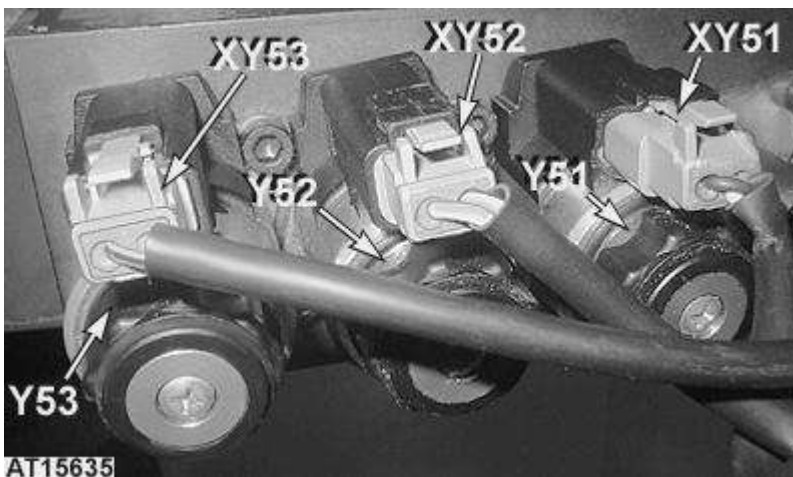
Plug layout		
Pin no.	Wire color on: EHM	Wire color on: EHM II
1	pink/blue	pink/blue
2	pink/green	pink/green

XY52 - 2-Pin Connector for Forward Low Clutch Solenoid Valve Y52 (EHM or EHM II)



ATXY51

2-pin connector for forward clutch solenoid valve Y52 (low) (EHM or EHM II)



2-pin connector for forward clutch solenoid valve Y52 (low) (EHM or EHM II)

LEGEND:

- XY51 2-pin connector for reverse clutch solenoid valve Y51 (EHM or EHM II)
- XY52 2-pin connector for forward clutch solenoid valve Y52 (low) (EHM or EHM II)
- XY53 2-pin connector for forward clutch solenoid valve Y53 (high) (EHM or EHM II)
- Y51 Reverse clutch solenoid valve (EHM or EHM II)
- Y52 Forward low clutch solenoid valve (EHM or EHM II)
- Y53 Forward high clutch solenoid valve (EHM or EHM II)

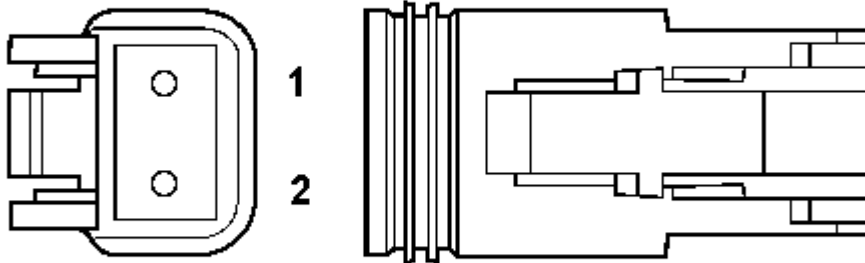
Component information

Component information	
Number of pins:	2
Connection Point:	Y52 - Forward Low Clutch Solenoid Valve (EHM or EHM II)
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)
Circuit:	SE26A - Forward Low Clutch (EHM), Diagnostic Schematic and Circuit Test or SE26B - Forward Low Clutch (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

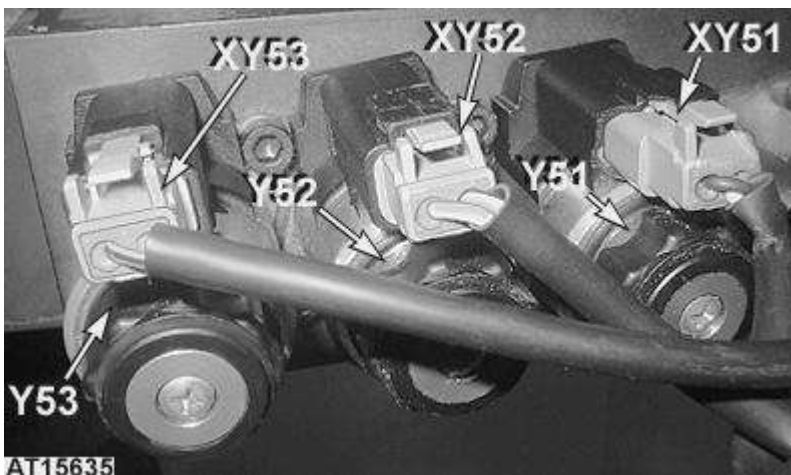
Plug layout		
Pin no.	Wire color on: EHM	Wire color on: EHM II
1	violet	orange/black
2	violet/black	orange/yellow

XY53 - 2-Pin Connector for Forward High Clutch Solenoid Valve Y53 (EHM or EHM II)



ATXY51

2-pin connector for forward clutch solenoid valve Y53 (high) (EHM or EHM II)



2-pin connector for forward clutch solenoid valve Y53 (high) (EHM or EHM II)

LEGEND:

- XY51 2-pin connector for reverse clutch solenoid valve Y51 (EHM or EHM II)
- XY52 2-pin connector for forward clutch solenoid valve Y52 (low) (EHM or EHM II)
- XY53 2-pin connector for forward clutch solenoid valve Y53 (high) (EHM or EHM II)
- Y51 Reverse clutch solenoid valve (EHM or EHM II)
- Y52 Forward low clutch solenoid valve (EHM or EHM II)
- Y53 Forward high clutch solenoid valve (EHM or EHM II)

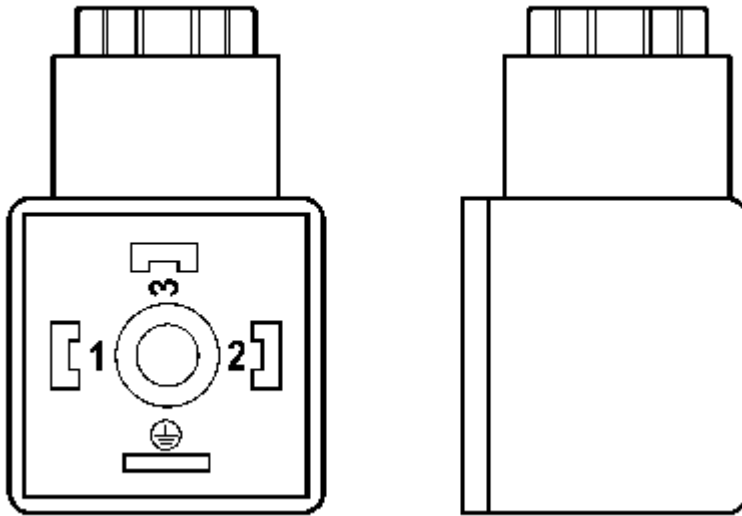
Component information

Component information	
Number of pins:	2
Connection Point:	Y53 - Forward High Clutch Solenoid Valve (EHM or EHM II)
Wiring harness:	W03 - 24/12-Speed Transmission Wiring Harness or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)
Circuit:	SE26A - Forward High Clutch (EHM), Diagnostic Schematic and Circuit Test or SE26B - Forward High Clutch (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

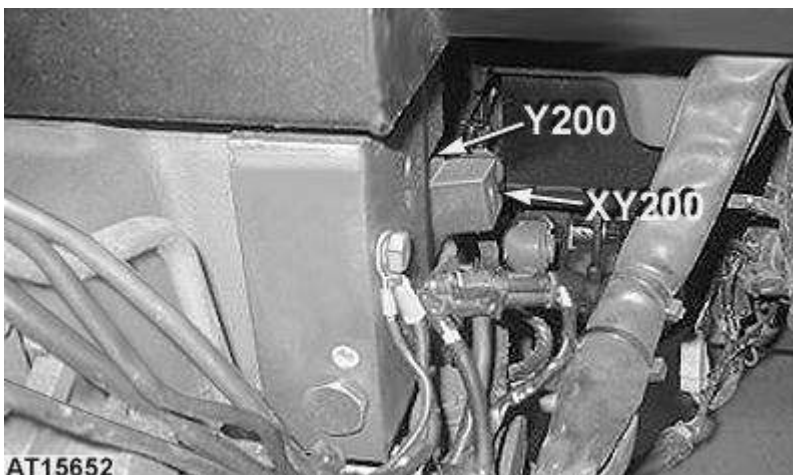
Plug layout		
Pin no.	Wire color on: EHM	Wire color on: EHM II
1	orange/black	violet
2	orange/yellow	violet/black

XY200 - 4-Pin Connector for Raise Solenoid Valve Y200 (EHS)



ATXY200

4-pin connector for raise solenoid valve Y200 (EHS)



AT15652

4-pin connector for raise solenoid valve Y200 (EHS)

LEGEND:

- XY200 4-pin connector for raise solenoid valve Y200 (EHS)
- Y200 Raise solenoid valve (EHS)

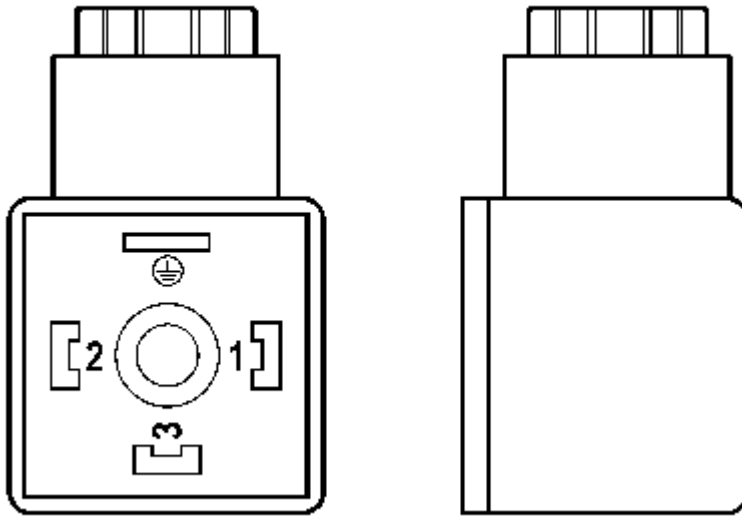
Component information

Component information	
Number of pins:	4
Connection Point:	Y200 - Raise Solenoid Valve (EHS)
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS)
Circuit:	SE15A - Raise Solenoid Valve Y200 (EHS), Diagnostic Schematic and Circuit Test

Plug layout

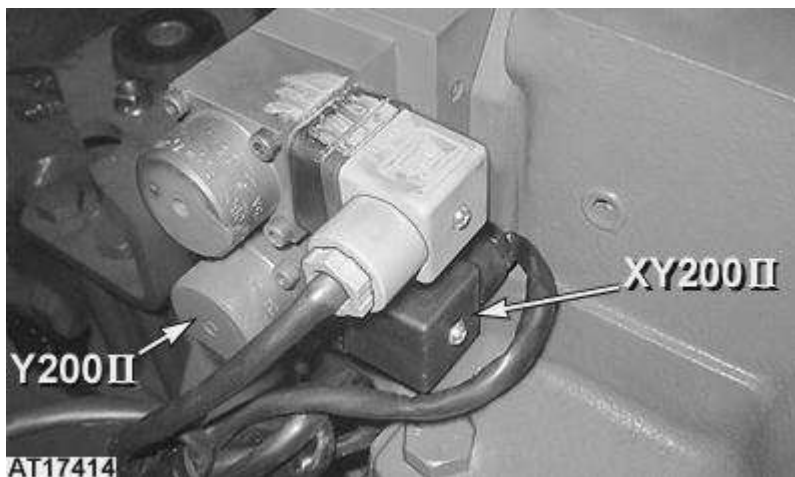
Plug layout	
Pin no.	Wire color
1	pink/grey
2	yellow
3	not used
Ground symbol	not used

XY200 II - 4-Pin Connector for Raise Solenoid Valve Y200 II (EHS II)



ATXY200II

4-pin connector for raise solenoid valve Y200 II (EHS II)



4-pin connector for raise solenoid valve Y200 II (EHS II)

LEGEND:

- XY200 II 4-pin connector for raise solenoid valve Y200 II (EHS II)
- Y200 II Raise solenoid valve (EHS II)

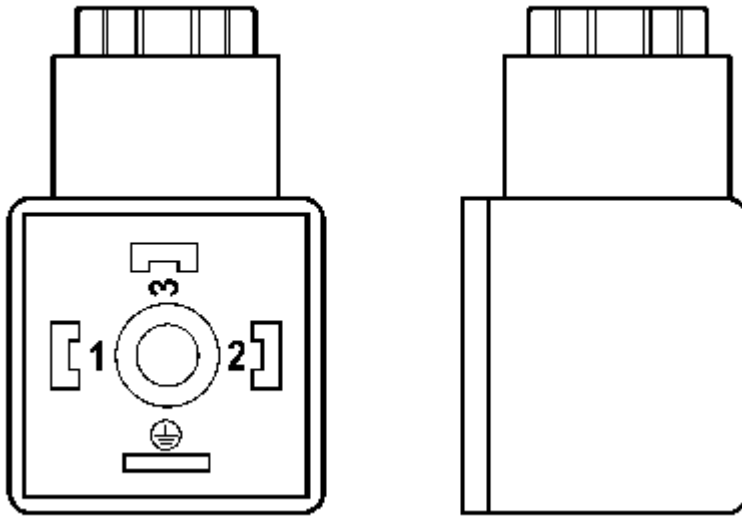
Component information

Component information	
Number of pins:	4 (black connector)
Connection Point:	Y200 II - Raise Solenoid Valve (EHS II)
Wiring harness:	W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15B - Raise Solenoid Valve Y200 II (EHS II), Diagnostic Schematic and Circuit Test

Plug layout

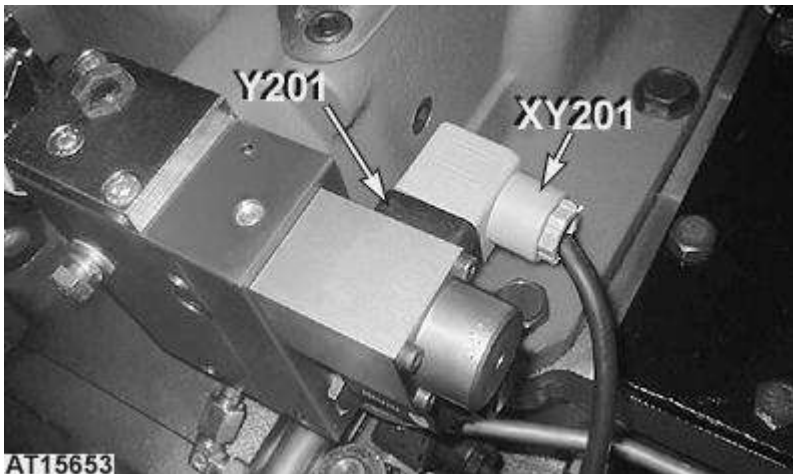
Plug layout	
Pin no.	Wire color
1	white
2	brown
3	not used
Ground symbol	not used

XY201 - 4-Pin Connector for Lower Solenoid Valve Y201 (EHS)



ATXY201

4-pin connector for lower solenoid valve Y201 (EHS)



4-pin connector for lower solenoid valve Y201 (EHS)

LEGEND:

- XY201 4-pin connector for lower solenoid valve Y201 (EHS)
- Y201 Lower solenoid valve (EHS)

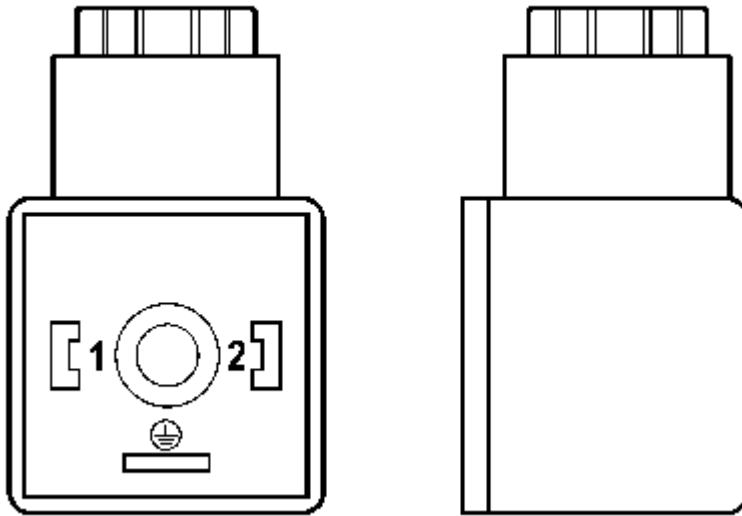
Component information

Component information	
Number of pins:	4
Connection Point:	Y201 - Lower Solenoid Valve (EHS)
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS)
Circuit:	SE15A - Lower Solenoid Valve Y201 (EHS), Diagnostic Schematic and Circuit Test

Plug layout

Plug layout	
Pin no.	Wire color
1	red/blue
2	green
3	not used
Ground symbol	not used

XY201 II - 3-Pin Connector for Lower Solenoid Valve Y201 II (EHS II)



ATXY201II

3-pin connector for lower solenoid valve Y201 II (EHS II)



3-pin connector for lower solenoid valve Y201 II (EHS II)

LEGEND:

- XY201 II 3-pin connector for lower solenoid valve Y201 II (EHS II)
- Y201 II Lower solenoid valve (EHS II)

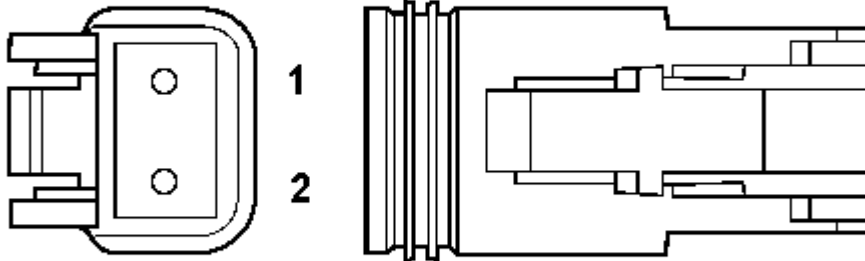
Component information

Component information	
Number of pins:	3 (grey connector)
Connection Point:	Y201 II - Lower Solenoid Valve (EHS II)
Wiring harness:	W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15B - Lower Solenoid Valve Y201 II (EHS II), Diagnostic Schematic and Circuit Test

Plug layout

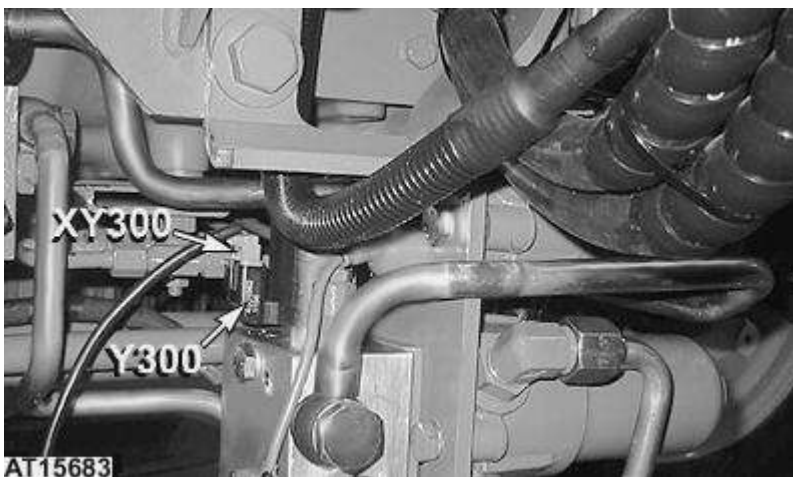
Plug layout	
Pin no.	Wire color
1	white
2	brown
Ground symbol	not used

XY300 - 2-Pin Connector for Shut-Off Solenoid Valve Y300 (EHM or EHM II)



ATXY300

2-pin connector for shut-off solenoid valve Y300 (EHM or EHM II)



2-pin connector for shut-off solenoid valve Y300 (EHM or EHM II)

LEGEND:

- XY300 2-pin connector for shut-off solenoid valve Y300 (EHM or EHM II)
- Y300 Shut-off solenoid valve (EHM or EHM II)

Component information

Component information	
Number of pins:	2
Connection Point:	Y300 - Shut-Off Solenoid Valve (EHM or EHM II)
Wiring harness:	W12 - Shut-Off System Wiring Harness (EHM) or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)

Component information	
Circuit:	SE26A - Shut-Off Solenoid Valve of Shut-Off System (EHM), Diagnostic Schematic and Circuit Test or SE26B - Shut-Off Solenoid Valve (EHM II), Diagnostic Schematic and Circuit Test

Plug layout

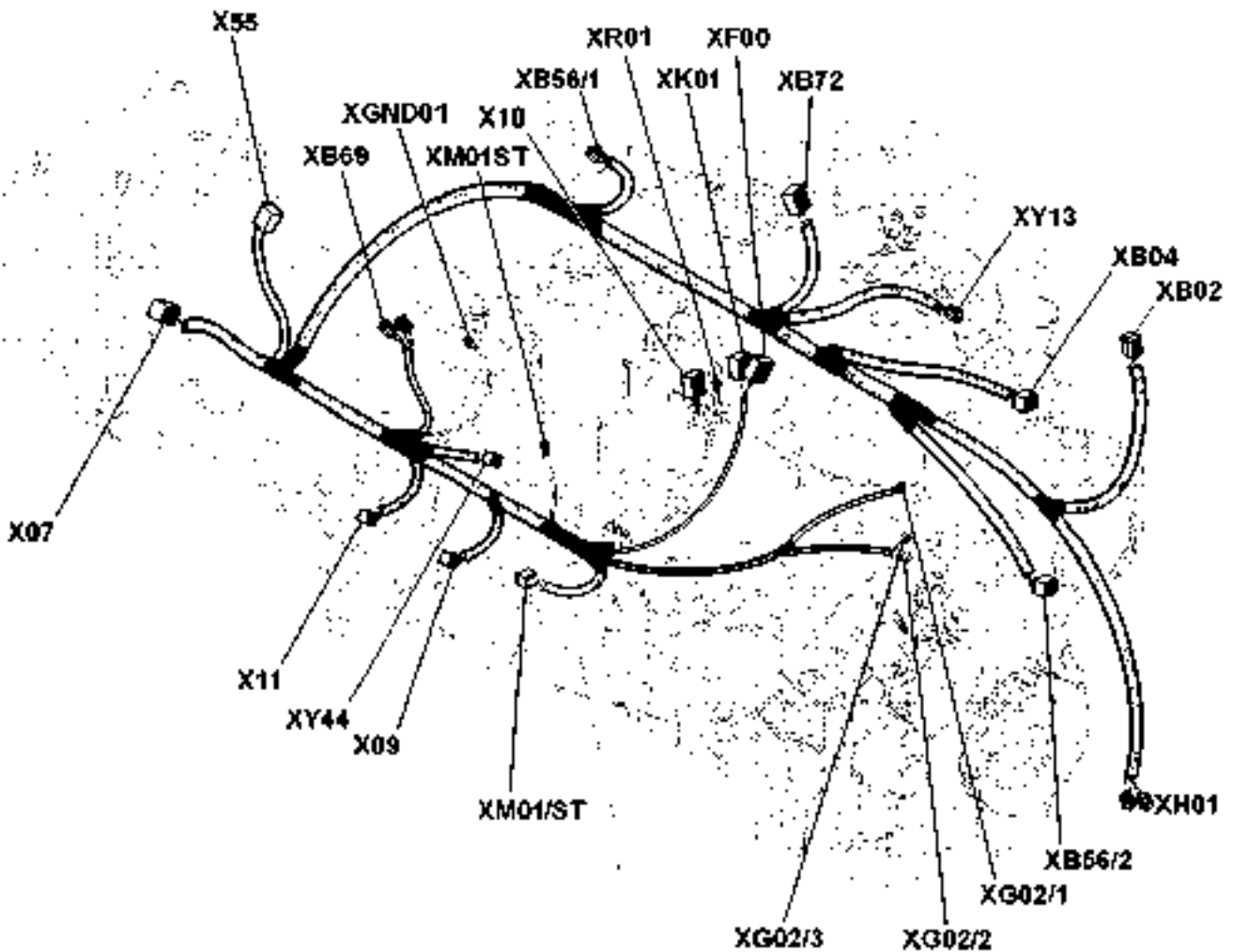
Plug layout	
Pin no.	Wire color
1	green/black
2	light blue/red

Group 110 - Component Information - Wiring Harnesses

Component Location - Wiring Harnesses (Summary of References)

- [W01 - Engine Wiring Harness](#)
- [W02 - Main Wiring Harness](#)
- [W03 - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- [W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- [W04 - Engine/Cab Wiring Harness](#)
- [W05 - Cab Wiring Harness](#)
- [W06 - Work Light Wiring Harness](#)
- [W07 - H4 Farm Headlight Wiring Harness](#)
- [W08 - Beacon Light Wiring Harness](#)
- [W09 - Hood Wiring Harness](#)
- [W10 - Intake Air Heater Wiring Harness](#)
- [W11 - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- [W11 II - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)
- [W12 - Shut-Off System Wiring Harness \(EHM\)](#)
- [W13 - Trailer Brake Valve Wiring Harness](#)
- [W14 - Fan and Air-Conditioning Wiring Harness](#)
- [W15 - Front Wiper Motor Wiring Harness](#)
- [W16 - Fuse and Relay Box II Wiring Harness](#)

W01 - Engine Wiring Harness



AT17233

W01 - Engine wiring harness

LEGEND:

- X07 14-pin interconnection between wiring harnesses W01 and W02
- X09 3-pin interconnection between wiring harnesses W01 and W09
- X10 1-pin interconnection between wiring harnesses W01 and W10
- X11 1-pin interconnection between wiring harnesses W01 and W04
- X55 1-pin interconnection between wiring harnesses W01 and W02
- XB02 2/1-pin connectors for air filter restriction sensor B02
- XB04 1-pin connector for engine oil pressure switch B04
- XB56/1 1-pin connector for coolant temperature sensor B56/1 (3-cyl. only)
- XB56/2 2-pin connector for coolant temperature sensor B56/2 (4-cyl. only)
- XB69 2/1-pin connectors for brake oil level sensor B69
- XB72 2-pin connector for engine speed sensor B72
- XF00 2-pin connector for main fuse F00
- XG02/1 1-pin connector for alternator G02 (+30)
- XG02/2 1-pin connector for alternator G02 (+15)
- XG02/3 1-pin connector for alternator G02 (L)
- XGND01 Ground connection W01
- XH01 2/1-pin connector for horn H01

XK01	4-pin connector for starter relay K01
XM01/1	Connector for starter motor M01 (main fuse F00 and alternator G02)
XM01ST	1-pin connector for starter motor M01 (activating lead)
XR01	1-pin connector for intake air heater R01 (3-cyl.)
XY13	2-pin connector for fuel shut-off solenoid valve Y13
XY44	2-pin connector for fuel transfer pump Y44

References: Component Information - Connectors

- [X07 - 14-Pin Interconnection between Wiring Harnesses W01 and W02](#)
- [X09 - 3-Pin Interconnection between Wiring Harnesses W01 and W09](#)
- [X10 - 1-Pin Interconnection between Wiring Harnesses W01 and W10](#)
- [X11 - 1-Pin Interconnection between Wiring Harnesses W01 and W04](#)
- [X55 - 1-Pin Interconnection between Wiring Harnesses W01 and W02](#)

- [XB02 - 2/1-Pin Connectors for Air Filter Restriction Sensor B02](#)
- [XB04 - 1-Pin Connector for Engine Oil Pressure Switch B04](#)
- [XB56/1 - 1-Pin Connector for Coolant Temperature Sensor B56/1 \(3-Cyl. only\)](#)
- [XB56/2 - 2-Pin Connector for Coolant Temperature Sensor B56/2 \(4-Cyl. only\)](#)
- [XB69 - 2/1-Pin Connectors for Brake Oil Level Sensor B69](#)
- [XB72 - 2-Pin Connector for Engine Speed Sensor B72](#)

- [XG02 - Connectors for Alternator G02](#)

- [XGND01 - Ground Connection W01](#)

- [XH01 - 2/1-Pin Connectors for Horn H01](#)

- [XK01 - 4-Pin Connector for Starter Relay K01](#)

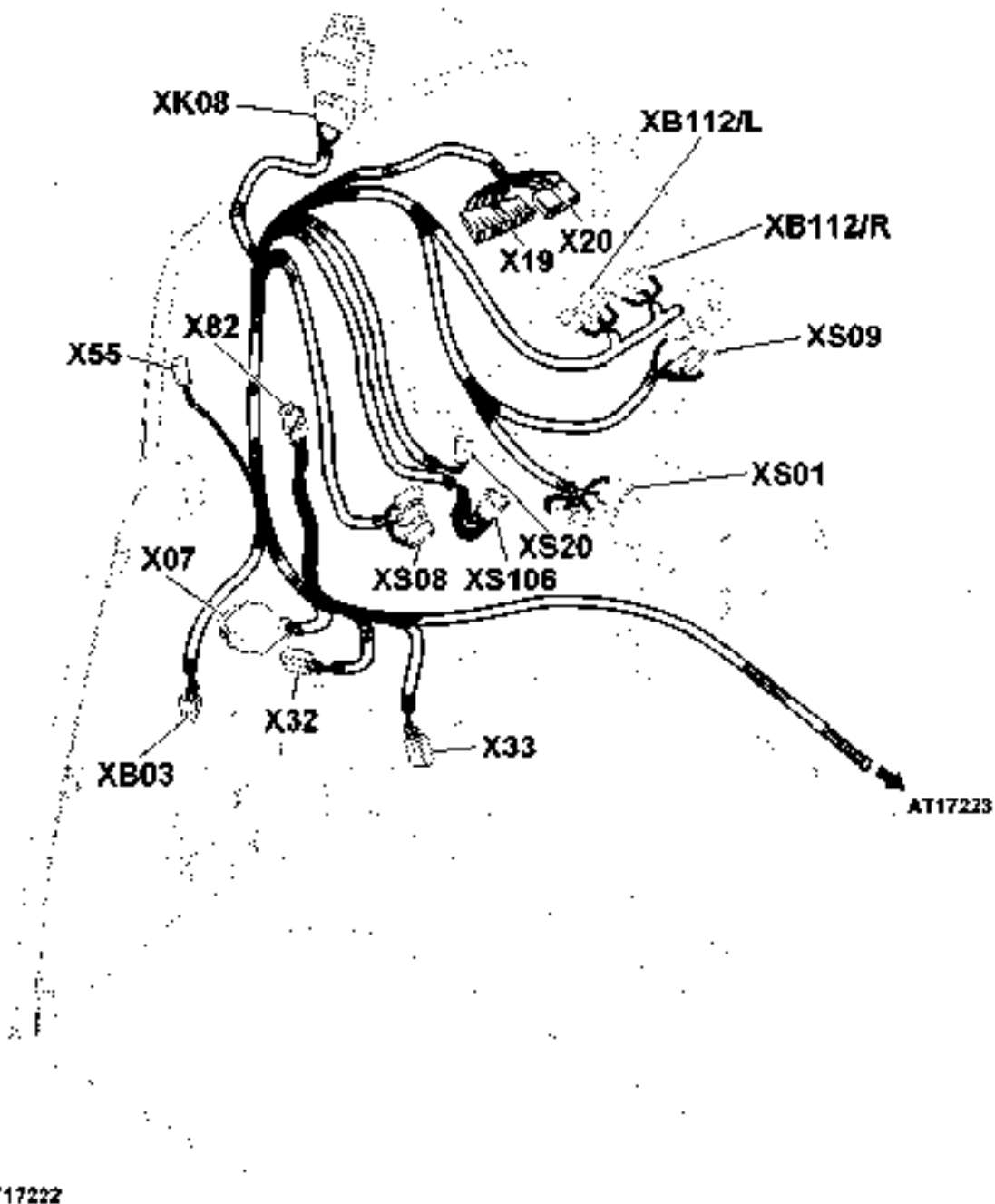
- [XM01 - Connector for Starter Motor M01](#)

- [XR01 - 1-Pin Connector for Intake Air Heater R01 \(3-Cyl.\)](#)

- [XY13 - 2-Pin Connector for Fuel Shut-Off Solenoid Valve Y13](#)
- [XY44 - 2-Pin Connector for Fuel Transfer Pump Y44](#)

W02 - Main Wiring Harness

References: Component Information - Connectors



W02/1 - front main wiring harness

LEGEND:

- X07 14-pin interconnection between wiring harnesses W01 and W02
- X19 18-pin connector for instrument panel
- X20 12-pin connector for instrument panel
- X32 3-pin connector for l.h. clearance light E03/1 and turn light H34/1 (tractors with cab)

X33	3-pin connector for r.h. clearance light E04/1 and turn light H44/1 (tractors with cab)
X55	1-pin interconnection between wiring harnesses W01 and W02
X82	2-pin interconnection between wiring harnesses W02 and W03 II
XB03	3-pin connector for fuel level sensor B03
XB112/L	3/1-pin connectors for l.h. brake pedal switch B112/L
XB112/R	3/1-pin connectors for r.h. brake pedal switch B112/R
XK08	6-pin connector for turn/warn signal relay K08
XS01	6/1-pin connectors for main switch S01
XS08	3/1-pin connectors for turn signal light switch S08
XS09	6/1-pin connectors for light and horn switch S09
XS20	2-pin connector for calibration switch S20 of digital instrument
XS106	7-pin connector for hazard warning light switch S106

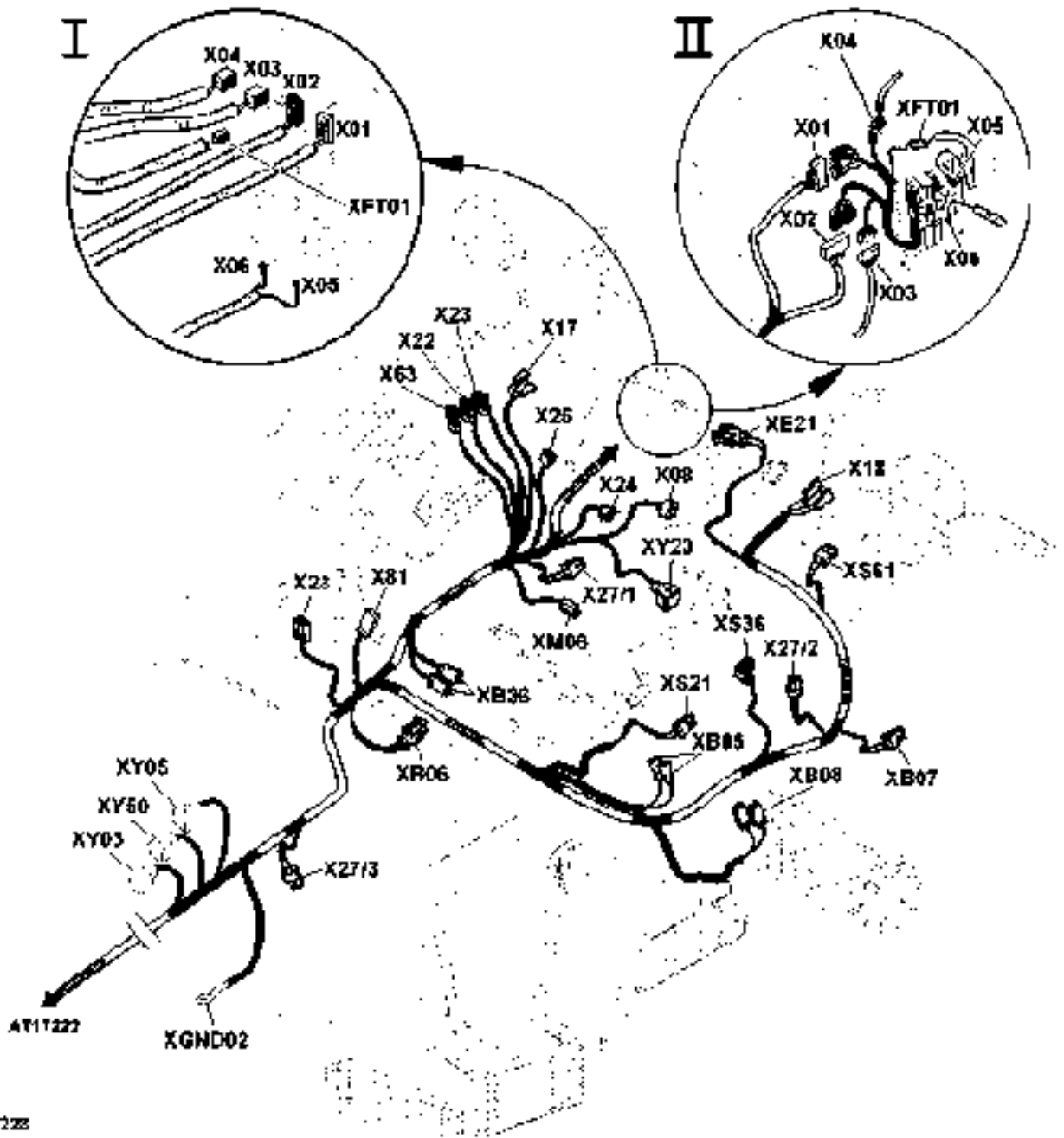
- [X07 - 14-Pin Interconnection between Wiring Harnesses W01 and W02](#)
- [X19 - 18-Pin Connector for Instrument Panel](#)
- [X20 - 12-Pin Connector for Instrument Panel](#)
- [X32 - 3-Pin Connector for E03/1 and H34/1 Lights l.h. \(Tractors with Cab\)](#)
- [X33 - 3-Pin Connector for E04/1 and H44/1 Lights r.h. \(Tractors with Cab\)](#)
- [X55 - 1-Pin Interconnection between Wiring Harnesses W01 and W02](#)
- [X82 - 2-Pin Interconnection between Wiring Harnesses W02 and W03 II](#)

- [XB03 - 3-Pin Connector for Fuel Level Sensor B03](#)
- [XB112 - 3/1-Pin Connectors for Brake Pedal Switches B112](#)

- [XK08 - 6-Pin Connector for Turn/Warn Signal Relay K08](#)

- [XS01 - 6/1-Pin Connectors for Main Switch S01](#)
- [XS08 - 3/1-Pin Connectors for Turn Signal Light Switch S08](#)
- [XS09 - 6/1-Pin Connectors for Light and Horn Switch S09](#)
- [XS20 - 2-Pin Connector for Calibration Switch S20 of Digital Instrument](#)
- [XS106 - 7-Pin Connector for Hazard Warning Light Switch S106](#)

References: Component Information - Connectors



W02/2 - rear main wiring harness

LEGEND:

- I Fuse and relay box (Version I)
- II Fuse and relay box (Version II)
- X01 21-pin connector for fuse box (white)
- X02 21-pin connector for fuse box (black)
- X05 1-pin connector for fuse box (+15)
- X06 1-pin connector for fuse box (+30)
- X08 4-pin interconnection between trailer brake wiring harness and W02
- X17 3-pin connector for 3-pin power outlet
- X18 7-pin connector for 7-pin trailer brake socket
- X23 3-pin connector for Hi-Lo switches (S53 and S52)
- X24 4-pin connector for E03/2, E13, H32, H34/2 and H35 lights l.h.
- X25 4-pin connector for E04/2, E14, H33, H44/2 and H45 lights r.h.

X27/1	2-pin interconnection between Wiring harnesses W02 and W08 (position 1)
X27/2	2-pin interconnection between Wiring harnesses W02 and W08 (position 2)
X27/3	2-pin interconnection between Wiring harnesses W02 and W08 (position 3)
X81	1-pin interconnection between wiring harnesses W02 and W03 II
XB05	2/1-pin connectors for parking brake switch B05
XB06	3-pin connector for transmission speed sensor B06
XB07	2-pin connector for PTO speed selection switch B07
XB08	2/1-pin connectors for PTO neutral start switch B08
XB36	2/1-pin connectors for neutral start switch B36
XE21	2-pin connector for license plate light E21
XFT01	1-pin connector for fuse box (3-pin power outlet)
XGND02	Ground connection W02
XM06	2-pin connector for air suspension seat compressor motor M06
XS21	2-pin connector for PTO mode switch S21
XS22	10-pin connector for differential lock switch S22
XS23	10-pin connector for reversal switch for allocation S23 (flow divider valve)
XS36	10-pin connector for beacon light switch S36
XS61	2-pin connector for rear work light with switch S61
XS63	10-pin connector for front-wheel drive switch S63
XY03	4-pin connector for front-wheel drive solenoid valve Y03
XY05	4-pin connector for differential lock solenoid valve Y05
XY23	4-pin connector for flow divider solenoid valve Y23
XY50	4-pin connector for electro-hydraulic Hi-Lo solenoid valve Y50

- [X01 - 21-Pin Connector for Fuse Box \(White\)](#)
- [X02 - 21-Pin Connector for Fuse Box \(Black\)](#)
- [X05 - 1-Pin Connector for Fuse Box \(+15\)](#)
- [X06 - 1-Pin Connector for Fuse Box \(+30\)](#)
- [X08 - 4-pin Interconnection between Trailer Brake Wiring Harness and W02](#)
- [X17 - 3-Pin Connector for 3-Pin Power Outlet](#)
- [X18 - 7-Pin Connector for 7-Pin Trailer Brake Socket](#)
- [X23 - 3-Pin Connector for Hi-Lo Switches \(S53 and S52\)](#)
- [X24 - 4-Pin Connector for E03/2, E13, H32, H34/2 and H35 Lights l.h.](#)
- [X25 - 4-Pin Connector for E04/2, E14, H33, H44/2 and H45 Lights r.h.](#)
- [X27 - 2-Pin Interconnection between Wiring Harnesses W02 and W08](#)
- [X81 - 1-Pin Interconnection between Wiring Harnesses W02 and W03 II](#)

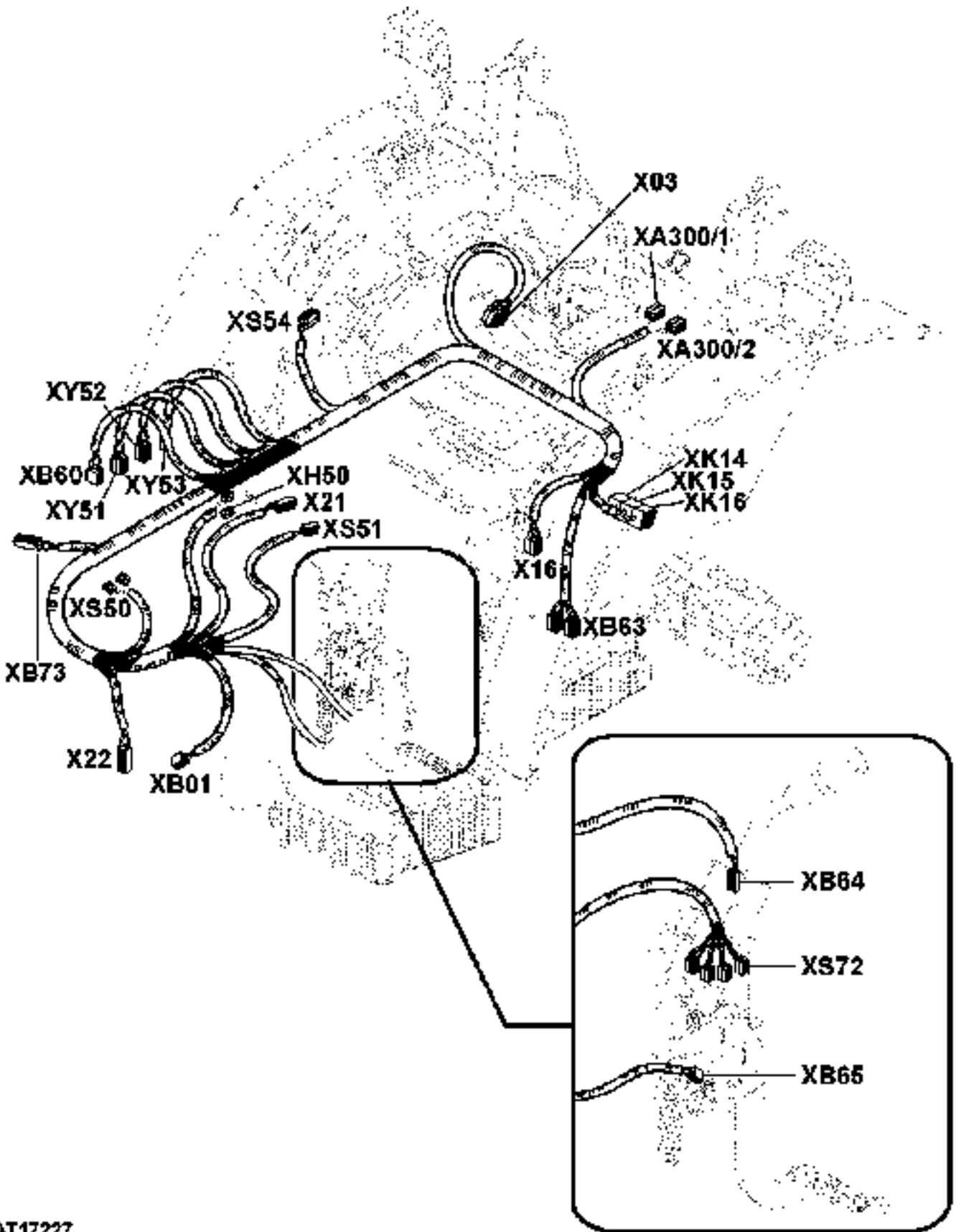
- [XB05 - 2/1-Pin Connectors for Parking Brake Switch B05](#)
- [XB06 - 3-Pin Connector for Transmission Speed Sensor B06](#)
- [XB07 - 2-Pin Connector for PTO Speed Selection Switch B07](#)
- [XB08 - 2/1-Pin Connectors for PTO Neutral Start Switch B08](#)
- [XB36 - 2/1-Pin Connectors for Neutral Start Switch B36](#)

- [XE21 - 2-Pin Connector for License Plate Light E21](#)

- [XFT01 - 1-Pin Connector for Fuse Box \(3-Pin Power Outlet\)](#)
- [XGND02 - Ground Connection W02](#)
- [XM06 - 2-Pin Connector for Air Suspension Seat Compressor Motor M06](#)
- [XS21 - 2-Pin Connector for PTO Mode Switch S21](#)
- [XS22 - 10-Pin Connector for Differential Lock Switch S22](#)
- [XS23 - 10-Pin Connector for Reversal Switch for Allocation S23 \(Flow Divider Valve\)](#)
- [XS36 - 10-Pin Connector for Beacon Light Switch S36](#)
- [XS61 - 2-Pin Connector for Rear Work Light with Switch S61](#)
- [XS63 - 10-Pin Connector for Front-Wheel Drive Switch S63](#)

- [XY03 - 4-Pin Connector for Front-Wheel Drive Solenoid Valve Y03](#)
- [XY05 - 4-Pin Connector for Differential Lock Solenoid Valve Y05](#)
- [XY23 - 4-Pin Connector for Flow Divider Solenoid Valve Y23](#)
- [XY50 - 4-pin connector for electro-hydraulic Hi-Lo solenoid valve Y50](#)

W03 - 24/12-Speed Transmission Wiring Harness (EHM)



AT17227

W03 - 24/12-speed transmission wiring harness

LEGEND:

X03	11-pin connector for fuse box
X16	9-pin com-port for diagnostic connector (EHM) to PC
X21	5-pin connector for instrument panel
X22	3-pin connector for diodes
XA300/1	12-pin connector for EHM control unit A300 (grey)
XA300/2	12-pin connector for EHM control unit A300 (black)
XB01	2-pin connector for ambient temperature sensor B01
XB60	2-pin connector for transmission oil temperature sensor B60
XB63	2-pin connector for high range/low range switch B63 on transmission
XB64	4-pin connector for reverse drive lever switch B64
XB65	6-pin connector for clutch pedal potentiometer B65
XB73	2-pin connector for oil filter restriction sensor B73 (24/12-speed transmission only)
XH50	2-pin connector for warning light H50 (24/12-speed transmission only)
XK14	4-pin connector for front-wheel drive relay K14 (24/12-speed transmission only)
XK15	4-pin connector for declutch relay K15 (24/12-speed transmission only)
XK16	4-pin connector for PTO neutral start relay K16 (24/12-speed transmission only)
XS50	2-pin connector for calibration switch S50
XS51	2-pin connector for calibration switch S51 of digital instrument (24/12-speed transmission only)
XS54	3-pin connector for declutch switch S54
XS72	4/1-pin connectors for clutch pedal switch S72
XY51	2-pin connector for reverse clutch solenoid valve Y51
XY52	2-pin connector for forward low clutch solenoid valve Y52
XY53	2-pin connector for forward high clutch solenoid valve Y53

References: Component Information - Connectors

- [X03 - 11-Pin Connector for Fuse Box](#)
- [X16 - 9-Pin Com-Port for Diagnostic Connector \(EHM\) to PC](#)
- [X21 - 5-Pin Connector for Instrument Panel](#)
- [X22 - 3-Pin Connector for Diodes](#)

- [XA300/1 - 12-Pin Connector for EHM Control Unit A300](#)
- [XA300/2 - 12-Pin Connector for EHM Control Unit A300](#)

- [XB01 - 2-Pin Connector for Ambient Temperature Sensor B01](#)
- [XB60 - 2-Pin Connector for Transmission Oil Temperature Sensor B60](#)
- [XB63 - 2-Pin Connector for High Range/Low Range Switch B63 on Transmission](#)
- [XB64 - 4-Pin Connector for Reverse Drive Lever Switch B64](#)
- [XB65 - 6-Pin Connector for Clutch Pedal Potentiometer B65](#)
- [XB73 - 2-Pin Connector for Oil Filter Restriction Sensor B73 \(24/12-Speed Transmission only\)](#)

- [XH50 - 2-Pin Connector for Warning Light H50 \(24/12-Speed Transmission only\)](#)
- [XK14 - 4-Pin Connector for Front-Wheel Drive Relay K14 \(24/12-Speed Transmission only\)](#)
- [XK15 - 4-Pin Connector for Declutch Relay K15 \(24/12-Speed Transmission only\)](#)
- [XK16 - 4-Pin Connector for PTO Neutral Start Relay K16 \(24/12-Speed Transmission only\)](#)

- [XS50 - 2-Pin Connector for Calibration Switch S50](#)
- [XS51 - 2-Pin Connector for Calibration Switch S51 of Digital Instrument \(24/12-Speed Transmission only\)](#)
- [XS54 - 1-Pin Connector for Declutch Switch S54](#)
- [XS72 - 4/1-Pin Connectors for Clutch Pedal Switch S72](#)

- [XY51 - 2-Pin Connector for Reverse Clutch Solenoid Valve Y51](#)
- [XY52 - 2-Pin Connector for Forward Low Clutch Solenoid Valve Y52](#)
- [XY53 - 2-Pin Connector for Forward High Clutch Solenoid Valve Y53](#)

X21	5-pin connector for instrument panel
X22	3-pin connector for diodes
X81	1-pin interconnection between wiring harnesses W02 and W03 II
X82	2-pin interconnection between wiring harnesses W02 and W03 II
XA310	56-pin connector for EHM II control unit A310
XB01	2-pin connector for ambient temperature sensor B01 (EHM or EHM II)
XB60	2-pin connector for transmission oil temperature sensor B60 (EHM or EHM II)
XB63	2-pin connector for high range/low range switch B63 on transmission (EHM or EHM II)
XB64	4-pin connector for reverse drive lever switch B64 (EHM or EHM II)
XB65	6-pin connector for clutch pedal potentiometer B65 (EHM or EHM II)
XB73	2-pin connector for oil filter restriction sensor B73 (EHM or EHM II)
XB300	2-pin connector for transmission oil pressure sensor B300 of high clutch (EHM or EHM II)
XB301	2-pin connector for transmission oil pressure sensor B301 of low clutch (EHM or EHM II)
XB302	2-pin connector for transmission oil pressure sensor B302 of reverse clutch (EHM or EHM II)
XB303	2-pin connector for EHM II system pressure sensor B303
XH50	2-pin connector for warning light H50 (EHM or EHM II)
XK14	4-pin connector for front-wheel drive relay K14 (EHM or EHM II)
XK15	4-pin connector for declutch relay K15 (EHM or EHM II)
XK16	4-pin connector for neutral start relay K16 (EHM or EHM II)
XS50	2-pin connector for calibration switch S50 (EHM or EHM II)
XS51	2-pin connector for calibration switch S51 of digital instrument (EHM or EHM II)
XS54	1-pin connector for declutch switch S54 (EHM or EHM II)
XS72	4/1-pin connectors for clutch pedal switch S72 (EHM or EHM II)
XY51	2-pin connector for reverse clutch solenoid valve Y51 (EHM or EHM II)
XY52	2-pin connector for forward low clutch solenoid valve Y52 (EHM or EHM II)
XY53	2-pin connector for forward high clutch solenoid valve Y53 (EHM or EHM II)
XY300	2-pin connector for shut-off solenoid valve Y300 (EHM or EHM II)

References: Component Information - Connectors

- [X03 - 11-Pin Connector for Fuse Box](#)
- [X16 - 9-Pin Com-Port for Diagnostic Connector \(EHM or EHM II\) to PC](#)
- [X21 - 5-Pin Connector for Instrument Panel](#)
- [X22 - 3-Pin Connector for Diodes](#)
- [X81 - 1-Pin Interconnection between Wiring Harnesses W02 and W03 II](#)
- [X82 - 2-Pin Interconnection between Wiring Harnesses W02 and W03 II](#)

- [XA310 - 56-Pin Connector for EHM II Control Unit A310](#)

- [XB01 - 2-Pin Connector for Ambient Temperature Sensor B01 \(EHM or EHM II\)](#)
- [XB60 - 2-Pin Connector for Transmission Oil Temperature Sensor B60 \(EHM or EHM II\)](#)

- [XB63 - 2-Pin Connector for High Range/Low Range Switch B63 on Transmission \(EHM or EHM II\)](#)
- [XB64 - 4-Pin Connector for Reverse Drive Lever Switch B64 \(EHM or EHM II\)](#)
- [XB65 - 6-Pin Connector for Clutch Pedal Potentiometer B65 \(EHM or EHM II\)](#)
- [XB73 - 2-Pin Connector for Oil Filter Restriction Sensor B73 \(EHM or EHM II\)](#)
- [XB300 - 2-Pin Connector for Transmission Oil Pressure Sensor B300 of High Clutch \(EHM or EHM II\)](#)
- [XB301 - 2-Pin Connector for Transmission Oil Pressure Sensor B301 of Low Clutch \(EHM or EHM II\)](#)
- [XB302 - 2-Pin Connector for Transmission Oil Pressure Sensor B302 of Reverse Clutch \(EHM or EHM II\)](#)
- [XB303 - 2-Pin Connector for EHM II System Pressure Sensor B303](#)

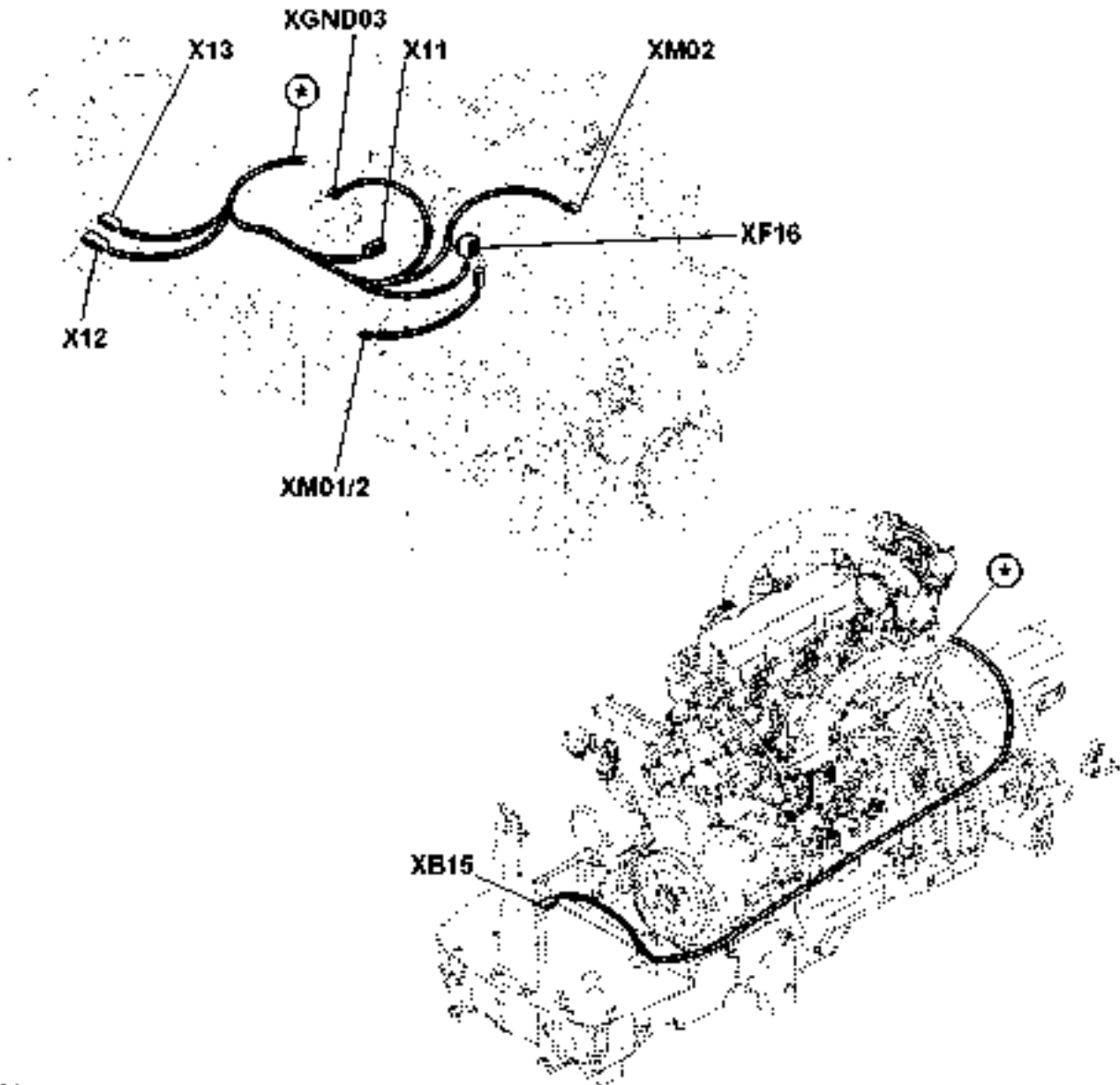
- [XH50 - 2-Pin Connector for Warning Light H50 \(EHM or EHM II\)](#)

- [XK14 - 5-Pin Connector for Front-Wheel Drive Relay K14 \(EHM or EHM II\)](#)
- [XK15 - 5-Pin Connector for Declutch Relay K15 \(EHM or EHM II\)](#)
- [XK16 - 5-Pin Connector for Neutral Start Relay K16 \(EHM or EHM II\)](#)

- [XS50 - 2-Pin Connector for Calibration Switch S50 \(EHM or EHM II\)](#)
- [XS51 - 2-Pin Connector for Calibration Switch S51 of Digital Instrument \(EHM or EHM II\)](#)
- [XS54 - 1-Pin Connector for Declutch Switch S54 \(EHM or EHM II\)](#)
- [XS72 - 4/1-Pin Connectors for Clutch Pedal Switch S72 \(EHM or EHM II\)](#)

- [XY51 - 2-Pin Connector for Reverse Clutch Solenoid Valve Y51 \(EHM or EHM II\)](#)
- [XY52 - 2-Pin Connector for Forward Low Clutch Solenoid Valve Y52 \(EHM or EHM II\)](#)
- [XY53 - 2-Pin Connector for Forward High Clutch Solenoid Valve Y53 \(EHM or EHM II\)](#)
- [XY300 - 2-Pin Connector for Shut-Off Solenoid Valve Y300 \(EHM or EHM II\)](#)

W04 - Engine/Cab Wiring Harness



AT16501

W04 - engine/cab wiring harness

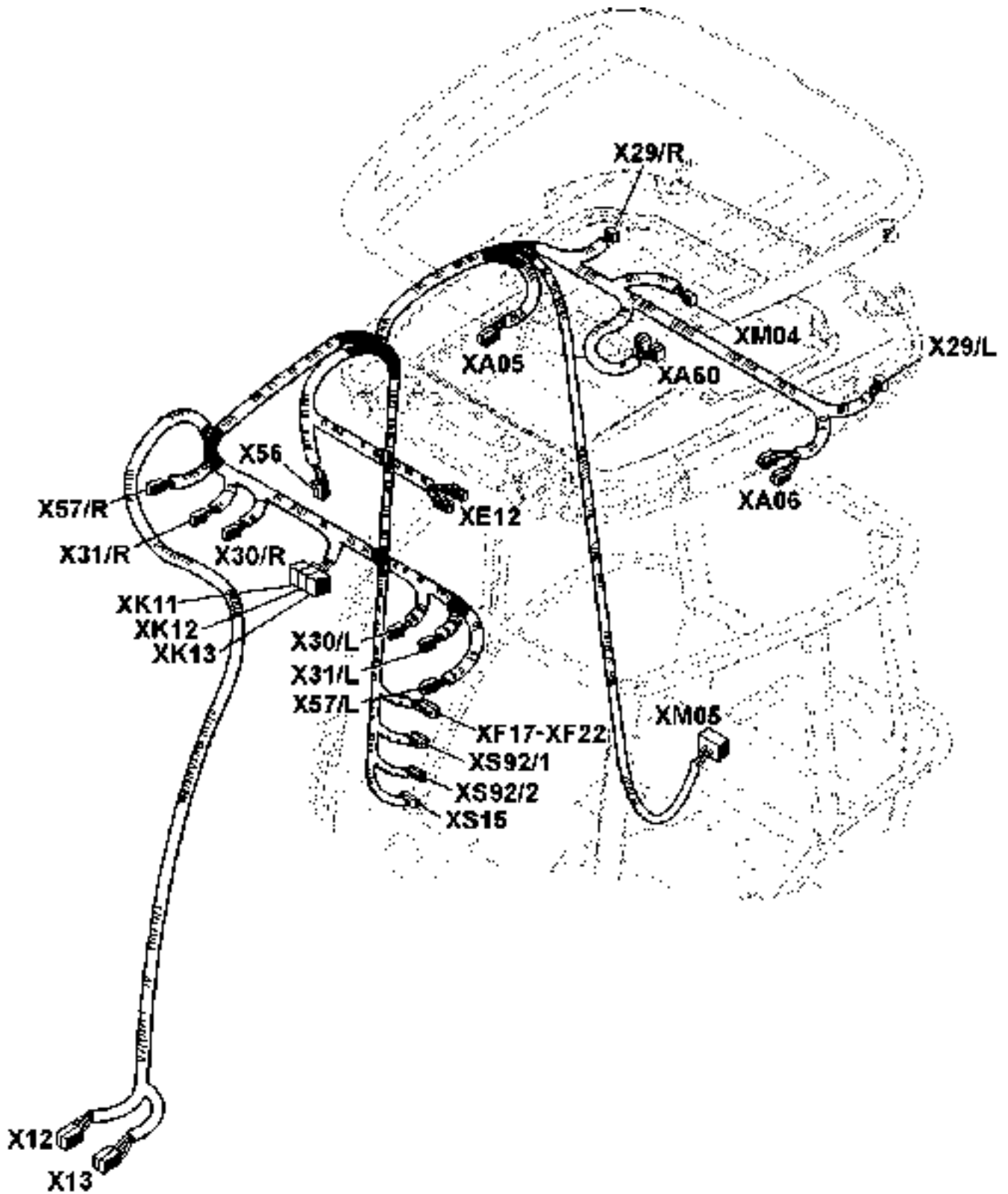
LEGEND:

- X11 1-pin interconnection between wiring harnesses W01 and W04
- X12 2-pin interconnection between wiring harnesses W04 and W05
- X13 2-pin interconnection between wiring harnesses W04 and W05 (air-conditioning system)
- XB15 2-pin connector for air-conditioning pressure switch B15
- XF16 2-pin connector for main fuse F16
- XGND03 Ground connection W04
- XM01/2 Connector for starter motor M01 (main fuse F16)
- XM02 1-pin connector for air-conditioning compressor clutch M02

References: Component Information - Connectors

- [X11 - 1-Pin Interconnection between Wiring Harnesses W01 and W04](#)
- [X12 - 2-Pin Interconnection between Wiring Harnesses W04 and W05](#)
- [X13 - 2-Pin Interconnection between Wiring Harnesses W04 and W05 \(Air-Conditioning System\)](#)
- [XB15 - 2-Pin Connector for Air-Conditioning Pressure Switch B15](#)
- [XF16 - 2-Pin Connector for Main Fuse F16](#)
- [XGND03 - Ground Connection W04](#)
- [XM01 - Connector for Starter Motor M01](#)
- [XM02 - 1-Pin Connector for Air-Conditioning Compressor Clutch M02](#)

W05 - Cab Wiring Harness



AT17246

W05 - Cab wiring harness

LEGEND:

X12 2-pin interconnection between wiring harnesses W04 and W05

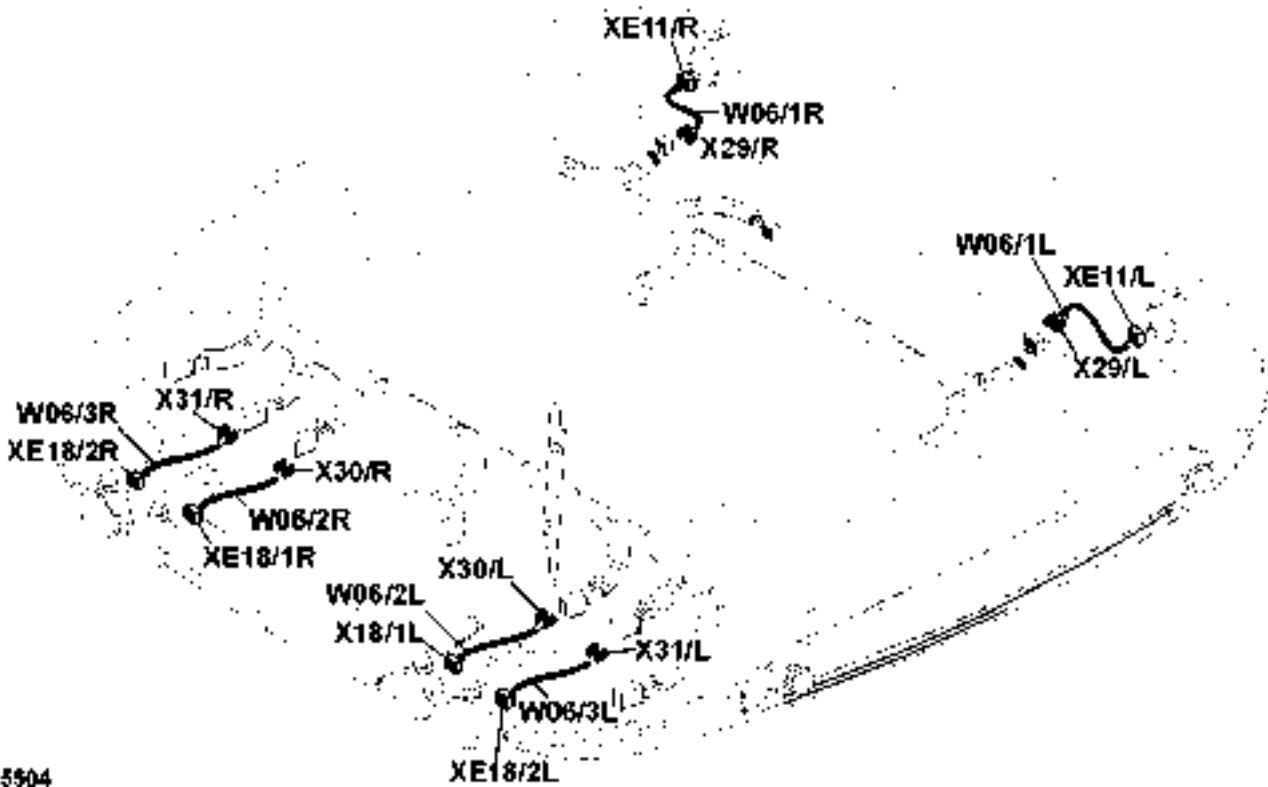
X13	2-pin interconnection between wiring harnesses W04 and W05 (air-conditioning system)
X29/L	2-pin interconnection between wiring harnesses W05 and W06/1L
X29/R	2-pin interconnection between wiring harnesses W05 and W06/1R
X30/L	2-pin interconnection between wiring harnesses W05 and W06/2L (inner)
X30/R	2-pin interconnection between wiring harnesses W05 and W06/2R (inner)
X31/L	2-pin interconnection between wiring harnesses W05 and W06/3L (outer)
X31/R	2-pin interconnection between wiring harnesses W05 and W06/3R (outer)
X56	2-pin interconnection between wiring harnesses W05 and W14
X57/L	2-pin interconnection between wiring harnesses W05 and W15
X57/R	2-pin interconnection between wiring harnesses W05 and W15
XA05	2-pin connector for r.h. loudspeaker A05
XA06	2-pin connector for l.h. loudspeaker A06
XA60	2/8-pin connectors for radio A60
XE12	2/1-pin connectors for dome light E12
XF17-XF22	Connectors for cab fuses (F17 to F22)
XK11	4-pin connector for relay of fan motor (tractors with cab)
XK12	4-pin connector for rear work light relay (tractors with cab)
XK13	4-pin connector for front work light relay (tractors with cab)
XM04	2-pin connector for rear wiper motor with switch M04
XM05	2-pin connector for pump of washer system M05
XM07	3/1-pin connectors for fan motor M07
XS15	8-pin connector for switch S15 of windshield wiper and pump of washer system
XS92/1	8-pin connector for front work light switch S92/1
XS92/2	8-pin connector for rear work light switch S92/2

References: Component Information - Connectors

- [X12 - 2-Pin Interconnection between Wiring Harnesses W04 and W05](#)
- [X13 - 2-Pin Interconnection between Wiring Harnesses W04 and W05 \(Air-Conditioning System\)](#)
- [X29/L - 2-Pin Interconnection between Wiring Harnesses W05 and W06/1L](#)
- [X29/R - 2-Pin Interconnection between Wiring Harnesses W05 and W06/1R](#)
- [X30/L - 2-Pin Interconnection between Wiring Harnesses W05 and W06/2L \(Inner\)](#)
- [X30/R - 2-Pin Interconnection between Wiring Harnesses W05 and W06/2R \(Inner\)](#)
- [X31/L - 2-Pin Interconnection between Wiring Harnesses W05 and W06/3L \(Outer\)](#)
- [X31/R - 2-Pin Interconnection between Wiring Harnesses W05 and W06/3R \(Outer\)](#)
- [X56 - 2-Pin Interconnection between Wiring Harnesses W05 and W14](#)
- [X57/L - 2-Pin Interconnection between Wiring Harnesses W05 and W15](#)
- [X57/R - 2-Pin Interconnection between Wiring Harnesses W05 and W15](#)
- [XA60 - 2/8-Pin Connectors for Radio A60](#)
- [XE12 - 2/1-Pin Connectors for Dome Light E12](#)

- [XF17 to XF22 - Connectors for Cab Fuses \(F17 to F22\)](#)
- [XK11 - 4-Pin Connector for Relay of Fan Motor \(Tractors with Cab\)](#)
- [XK12 - 4-Pin Connector for Rear Work Light Relay \(Tractors with Cab\)](#)
- [XK13 - 4-Pin Connector for Front Work Light Relay \(Tractors with Cab\)](#)
- [XM04 - 2-Pin Connector for Rear Wiper Motor with Switch M04](#)
- [XM05 - 2-Pin Connector for Pump of Washer System M05](#)
- [XS15 - 8-Pin Connector for Switch S15 of Windshield Wiper and Pump of Washer System](#)
- [XS92/1 - 8-Pin Connector for Front Work Light Switch S92/1](#)
- [XS92/2 - 8-Pin Connector for Rear Work Light Switch S92/2](#)

W06 - Work Light Wiring Harness



AT15504

W06 - work light wiring harness

LEGEND:

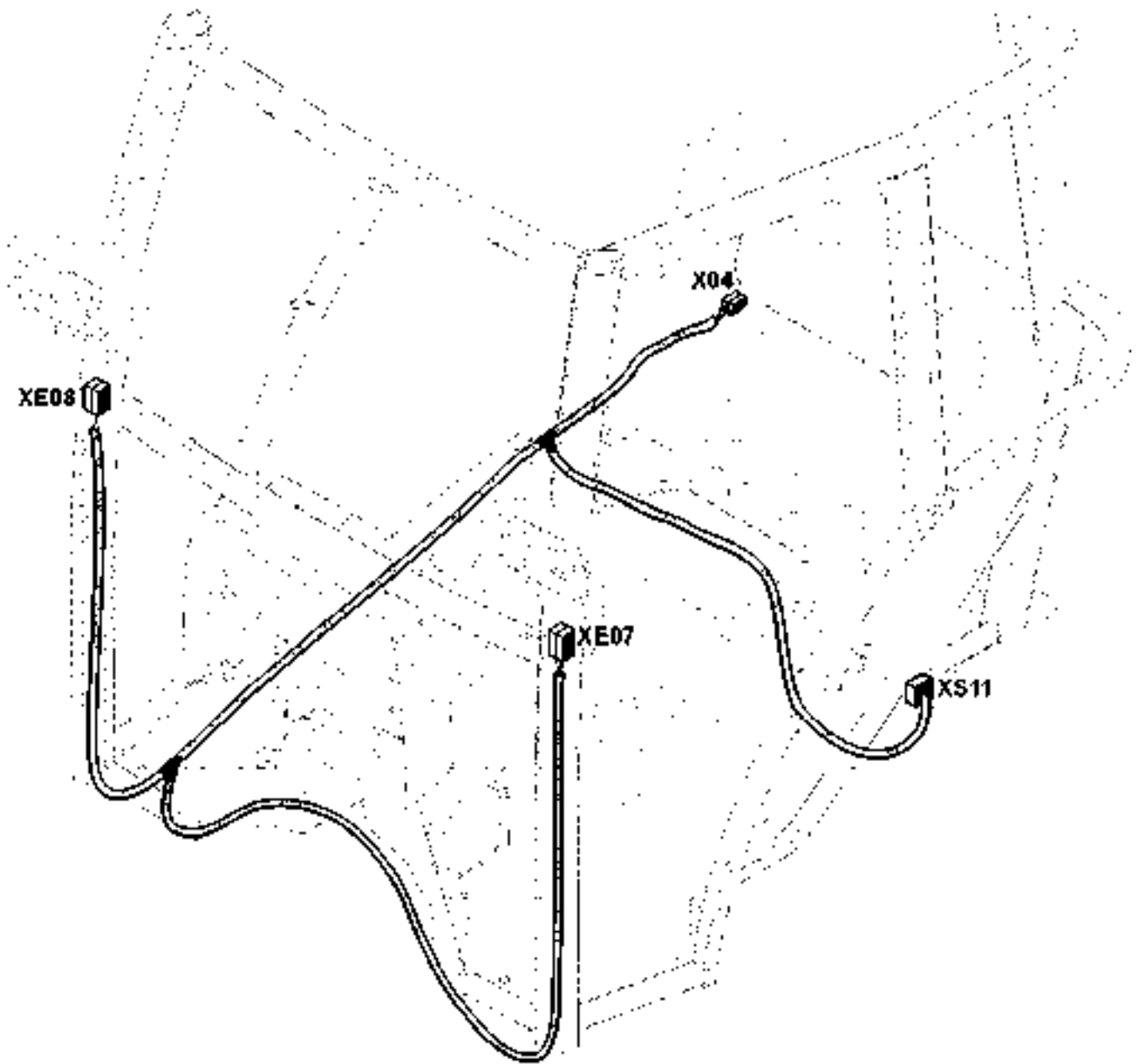
- W06/1L Rear work light wiring harness l.h.
- W06/1R Rear work light wiring harness r.h.
- W06/2L Front work light wiring harness l.h. (inner)
- W06/2R Front work light wiring harness r.h. (inner)
- W06/3L Front work light wiring harness l.h. (outer)
- W06/3R Front work light wiring harness r.h. (outer)
- X29/L 2-pin interconnection between wiring harnesses W05 and W06/1L
- X29/R 2-pin interconnection between wiring harnesses W05 and W06/1R
- X30/L 2-pin interconnection between wiring harnesses W05 and W06/2L (inner)
- X30/R 2-pin interconnection between wiring harnesses W05 and W06/2R (inner)
- X31/L 2-pin interconnection between wiring harnesses W05 and W06/3L (outer)
- X31/R 2-pin interconnection between wiring harnesses W05 and W06/3R (outer)
- XE11/L 2-pin connector for l.h. rear work light E11/L
- XE11/R 2-pin connector for r.h. rear work light E11/R
- XE18/1L 2-pin connector for l.h. front work light E18/1L (inner)
- XE18/1R 2-pin connector for r.h. front work light E18/1R (inner)
- XE18/2L 2-pin connector for l.h. front work light E18/2L (outer)
- XE18/2R 2-pin connector for r.h. front work light E18/2R (outer)

References: Component Information - Connectors

- [X29/L - 2-Pin Interconnection between Wiring Harnesses W05 and W06/1L](#)
- [X29/R - 2-Pin Interconnection between Wiring Harnesses W05 and W06/1R](#)
- [X30/L - 2-Pin Interconnection between Wiring Harnesses W05 and W06/2L \(Inner\)](#)
- [X30/R - 2-Pin Interconnection between Wiring Harnesses W05 and W06/2R \(Inner\)](#)
- [X31/L - 2-Pin Interconnection between Wiring Harnesses W05 and W06/3L \(Outer\)](#)
- [X31/R - 2-Pin Interconnection between Wiring Harnesses W05 and W06/3R \(Outer\)](#)

- [XE11/L - 2-Pin Connector for l.h. Rear Work Light E11/L](#)
- [XE11/R - 2-Pin Connector for r.h. Rear Work Light E11/R](#)
- [XE18/1L - 2-Pin Connector for l.h. Front Work Light E18/1L \(Inner\)](#)
- [XE18/1R - 2-Pin Connector for r.h. Front Work Light E18/1R \(Inner\)](#)
- [XE18/2L - 2-Pin Connector for l.h. Front Work Light E18/2L \(Outer\)](#)
- [XE18/2R - 2-Pin Connector for r.h. Front Work Light E18/2R \(Outer\)](#)

W07 - H4 Farm Headlight Wiring Harness



AT15502

W07 - H4 farm headlight wiring harness

LEGEND:

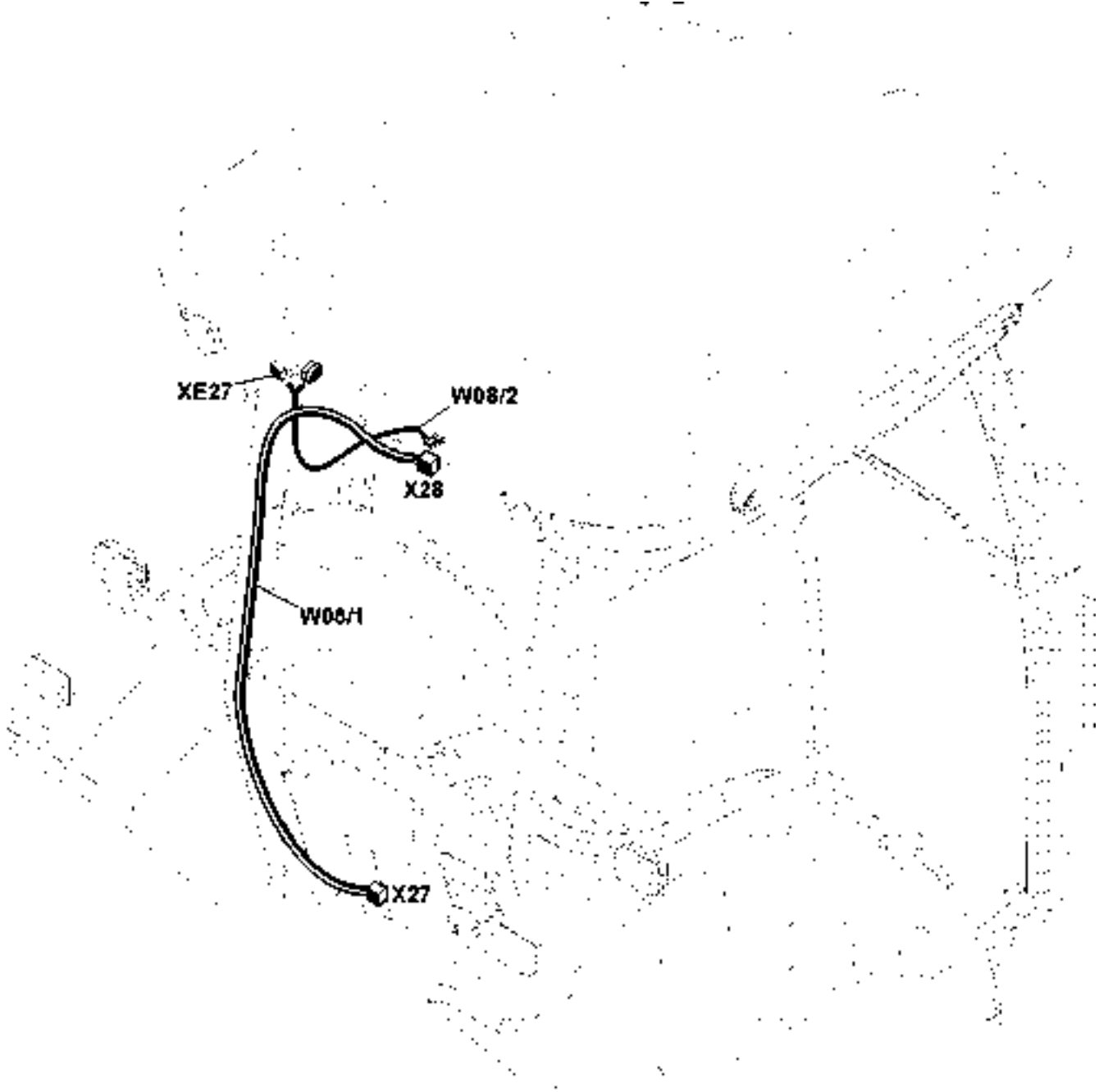
- X04 5-pin connector for fuse box
- XE07 3-pin connector for l.h. H4 farm headlight E07
- XE08 3-pin connector for r.h. H4 farm headlight E08
- XS11 10-pin connector for H4 farm headlight switch S11

References: Component Information - Connectors

- [X04 - 5-Pin Connector for Fuse Box](#)

- [XE07 - 3-Pin Connector for l.h. H4 Farm Headlight E07](#)
- [XE08 - 3-Pin Connector for r.h. H4 Farm Headlight E08](#)
- [XS11 - 10-Pin Connector for H4 Farm Headlight Switch S11](#)

W08 - Beacon Light Wiring Harness



AT15508

W08 - beacon light wiring harness

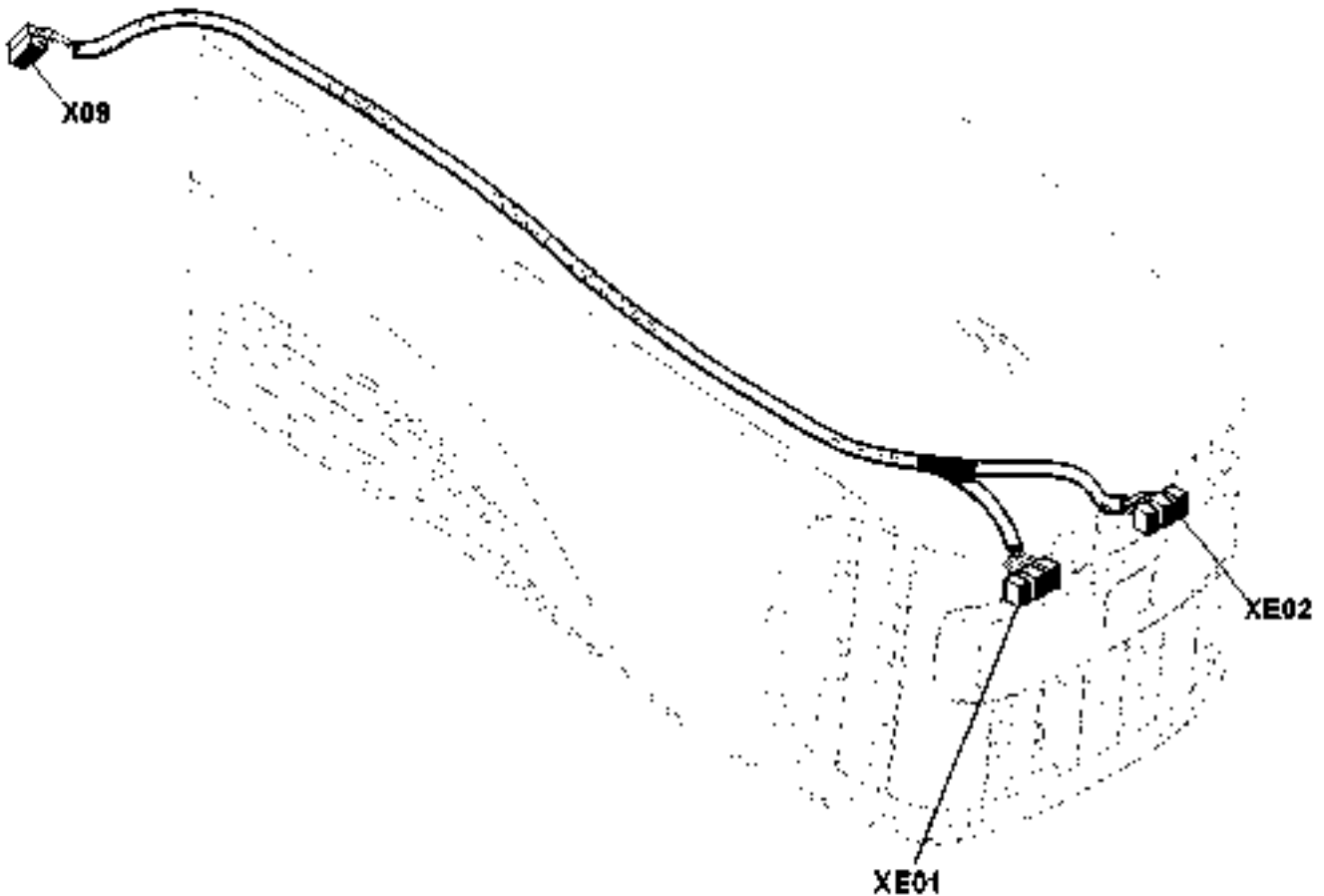
LEGEND:

- W08/1 Beacon light wiring harness W08/1
- W08/2 Beacon light wiring harness W08/2
- X27 2-pin interconnection between wiring harnesses W02 and W08
- X28 2-pin interconnection between wiring harnesses W08/1 and W08/2
- XE27 2/1-pin connectors for beacon light E27

References: Component Information - Connectors

- [X27 - 2-Pin Interconnection between Wiring Harnesses W02 and W08](#)
- [X28 - 2-Pin interconnection between wiring harnesses W08/1 and W08/2](#)
- [XE27 - 2/1-Pin Connectors for Beacon Light E27](#)

W09 - Hood Wiring Harness



AT15493

W09 - hood wiring harness

LEGEND:

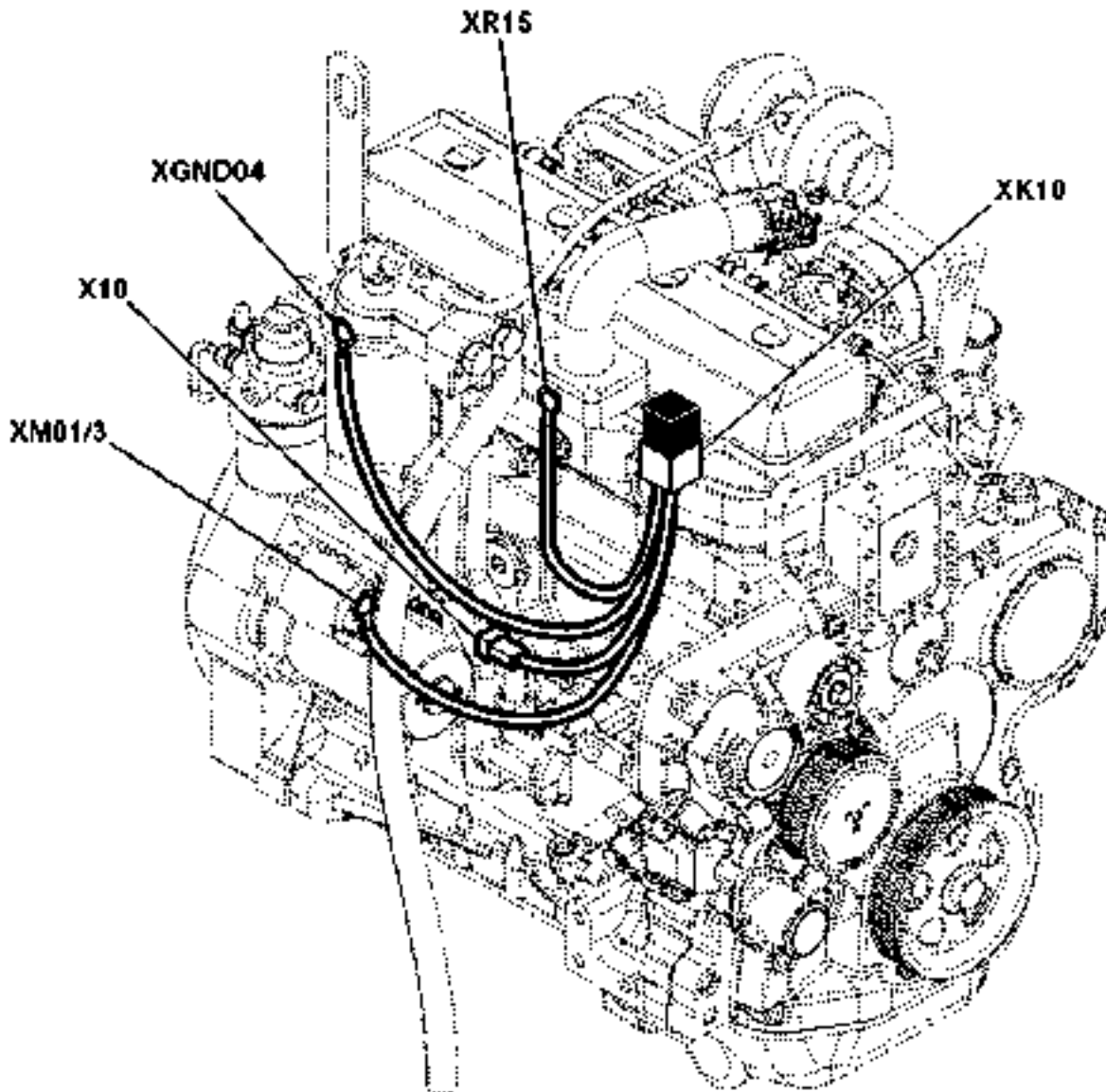
- X09 3-pin interconnection between wiring harnesses W01 and W09
- XE01 3/1-pin connectors for r.h. H4 headlight E01
- XE02 3/1-pin connectors for l.h. H4 headlight E02

References: Component Information - Connectors

- [X09 - 3-Pin Interconnection between Wiring Harnesses W01 and W09](#)

- [XE01 - 3/1-Pin Connectors for r.h. H4 Headlight E01](#)
- [XE02 - 3/1-Pin Connectors for l.h. H4 Headlight E02](#)

W10 - Intake Air Heater Wiring Harness



AT15514

W10 - intake air heater wiring harness

LEGEND:

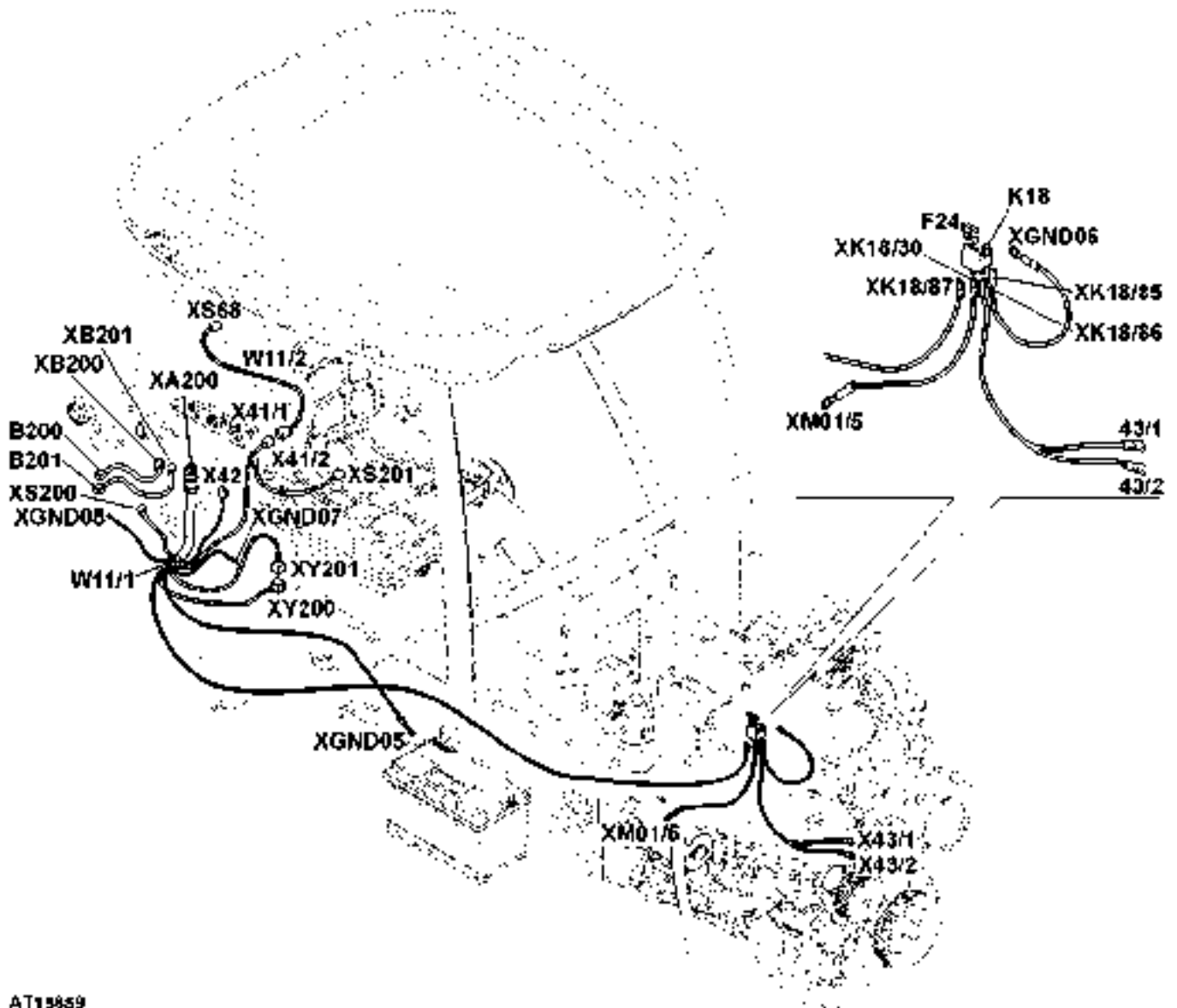
- X10 1-pin interconnection between wiring harnesses W01 and W10
- XGND04 Ground connection W10
- XK10 4-pin connector for intake air heater relay K10
- XM01/3 Connector for starter motor M01 (intake air heater R15)
- XR15 1-pin connector for intake air heater R15 (4-cyl.)

References: Component Information - Connectors

- [X10 - 1-Pin Interconnection between Wiring Harnesses W01 and W10](#)
- [XGND04 - Ground Connection W10](#)
- [XK10 - 4-Pin Connector for Intake Air Heater Relay K10](#)

- [XM01 - Connector for Starter Motor M01](#)
- [XR15 - 1-Pin Connector for Intake Air Heater R15 \(4-Cyl.\)](#)

W11 - Electronic Hitch Sensing Wiring Harness (EHS)



AT15459

W11 - electronic hitch sensing wiring harness (EHS)

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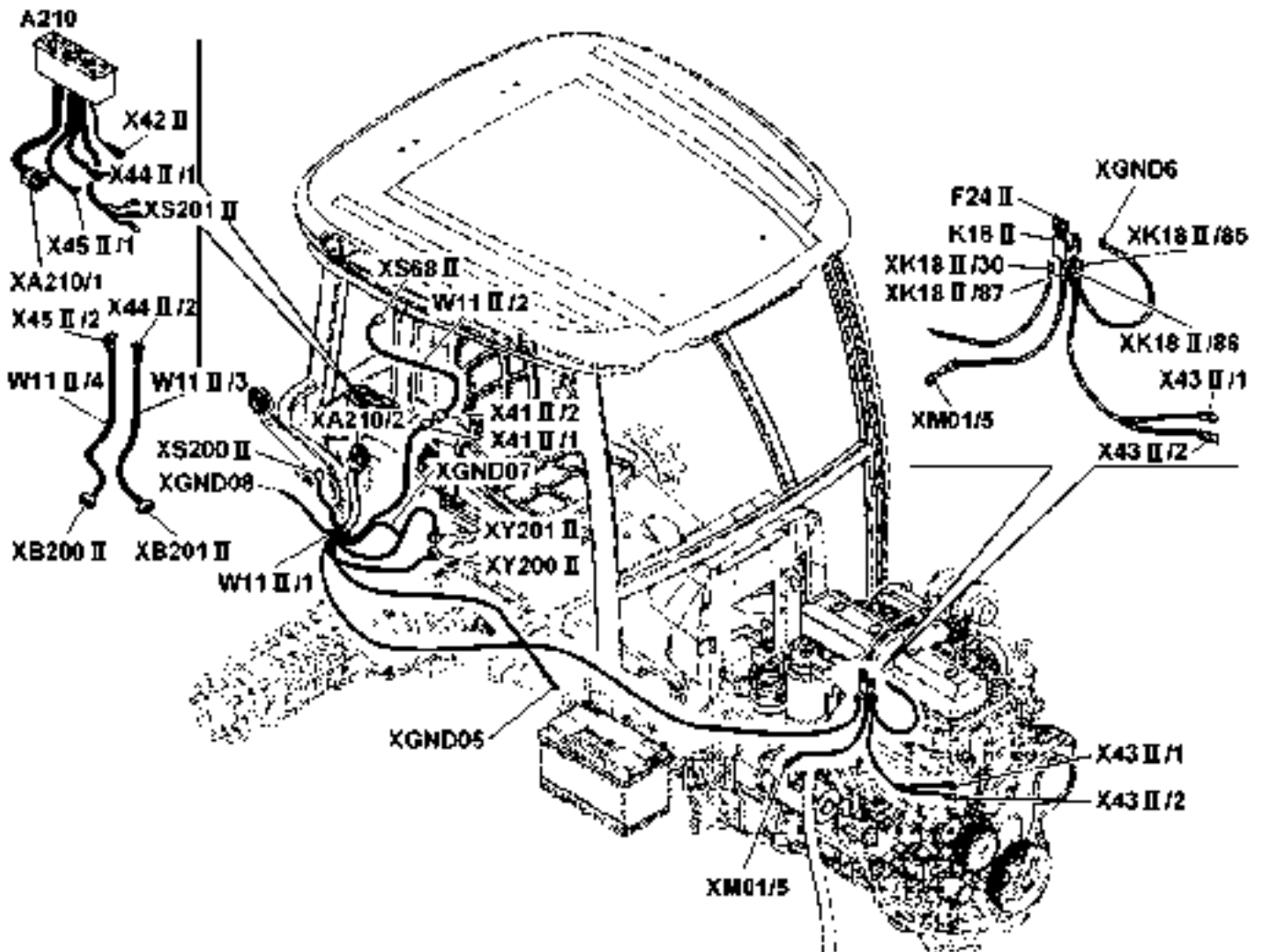
- B200 Position sensor (EHS)
- B201 Draft sensor (EHS)
- F24 20 amp fuse for electronic hitch sensing circuit (EHS)
- K18 Relay of electronic hitch sensing (EHS)
- W11/1 Electronic hitch sensing wiring harness
- W11/2 Electronic hitch sensing wiring harness to hitch remote control switch S68 (EHS)
- X41/1 4-pin interconnection between wiring harnesses W11/1 and W11/2 (EHS)
- X41/2 4-pin interconnection between wiring harnesses W11/1 and W11/2 (EHS)
- X42 3-pin connector for diagnostic (EHS) to PC

X43/1	1-pin interconnection between relay K18 and alternator G02 (+15)
X43/2	1-pin interconnection between relay K18 and alternator G02 (+15)
XA200	Connector for EHS control panel A200
XB200	3-pin connector for position sensor B200 (EHS)
XB201	3-pin connector for draft sensor B201 (EHS)
XGND05	Ground connection W11 or W11 II
XGND06	Ground connection W11 or W11 II
XGND07	Ground connection W11 or W11 II
XGND08	Ground connection W11 or W11 II
XK18/30	1-pin connector for relay K18 (EHS) (black lead)
XK18/85	1-pin connector for relay K18 (EHS) (black lead)
XK18/86	1-pin connector for relay K18 (EHS) (black lead)
XK18/87	1-pin connector for relay K18 (EHS) (black lead)
XM01/5	Connector for starter motor M01 (red lead)
XS68	6-pin connector for hitch remote control switch S68 (EHS)
XS200	2-pin connector for raise limiting switch S200 (EHS)
XS201	3/1-pin connector for raise/lower switch S201 (EHS)
XY200	4-Pin Connector for Raise Solenoid Valve Y200 (EHS)
XY201	4-Pin Connector for Lower Solenoid Valve Y201 (EHS)

References: Component Information - Connectors

- [B200 - Position Sensor \(EHS\)](#)
- [B201 - Draft Sensor \(EHS\)](#)
- [F24 - Fuse for Electronic Hitch Sensing Circuit \(EHS\)](#)
- [K18 - Relay of Electronic Hitch Sensing \(EHS\)](#)
- [X41 - 4-Pin Interconnection between Wiring Harnesses W11/1 and W11/2 \(EHS\)](#)
- [X42 - 3-Pin Connector for Diagnostic \(EHS\) to PC](#)
- [X43 - 2/1-Pin Interconnections between Relay K18 and Alternator G02 \(+15\)](#)
- [XA200 - Connector for EHS Control Panel A200](#)
- [XB200 - 3-Pin Connector for Position Sensor B200 \(EHS\)](#)
- [XB201 - 3-Pin Connector for Draft Sensor B201 \(EHS\)](#)
- [XGND05 - Ground Connection W11 or W11 II](#)
- [XGND06 - Ground Connection W11 or W11 II](#)
- [XGND07 - Ground Connection W11 or W11 II](#)
- [XGND08 - Ground Connection W11 or W11 II](#)
- [XK18 - 4/1-Pin Connectors for Relay K18 \(EHS\)](#)
- [XM01 - Connector for Starter Motor M01](#)
- [XS68 - 6-Pin Connector for Hitch Remote Control Switch S68 \(EHS\)](#)
- [XS200 - 2-Pin Connector for Raise Limiting Switch S200 \(EHS\)](#)
- [XS201 - 3/1-Pin Connector for Raise/Lower Switch S201 \(EHS\)](#)
- [XY200 - 4-Pin Connector for Raise Solenoid Valve Y200 \(EHS\)](#)
- [XY201 - 4-Pin Connector for Lower Solenoid Valve Y201 \(EHS\) or Y201/2 \(EHS II\)](#)

W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)



AT17404

W11 II - electronic hitch sensing wiring harness (EHS II)

LEGEND:

- A210 EHS II control panel
- F24 II 20 amp fuse for electronic hitch sensing circuit (EHS II)
- K18 II Relay of electronic hitch sensing (EHS II)
- W11 II/1 Electronic hitch sensing wiring harness (EHS II)
- W11 II/2 Adapter wiring harness (EHS II) to hitch remote control switch S68 II (EHS II)
- W11 II/3 Adapter wiring harness (EHS II) to position sensor B200 II (EHS II)
- W11 II/4 Adapter wiring harness (EHS II) to draft sensor B201 II (EHS II)
- X41 II/1 4-pin interconnection between wiring harnesses W11 II/1 and W11 II/2 (EHS II)
- X41 II/2 4-pin interconnection between wiring harnesses W11 II/1 and W11 II/2 (EHS II)
- X42 II 3-pin connector for diagnostic (EHS II) to PC

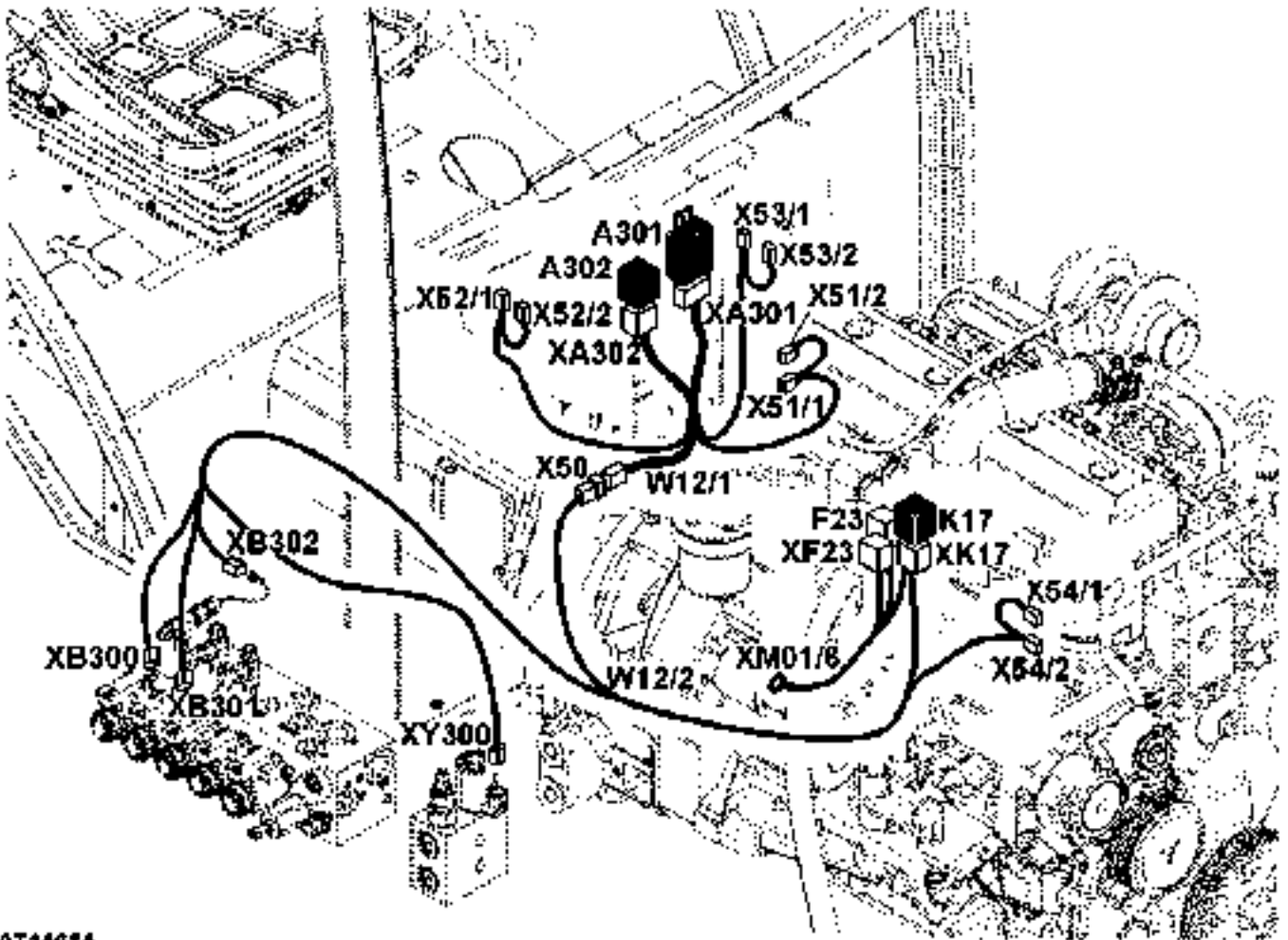
X43 II/1	1-pin interconnection between relay K18 II and alternator G02 (+15)
X43 II/2	1-pin interconnection between relay K18 II and alternator G02 (+15)
X44 II/1	3-pin interconnection between EHS II control panel A210 and W11 II/3 (EHS II)
X44 II/2	3-pin interconnection between W11 II/3 (EHS II) and EHS II control panel A210
X45 II/1	3-pin interconnection between EHS II control panel A210 and W11 II/4 (EHS II)
X45 II/2	3-pin interconnection between W11 II/4 (EHS II) and EHS II control panel A210
XA210/1	12-pin interconnection between EHS II control panel A210 and W11 II/1 (EHS II)
XA210/2	12-pin interconnection between W11 II/1 (EHS II) and EHS II control panel A210
XB200 II	3-pin connector for position sensor B200 II (EHS II)
XB201 II	3-pin connector for draft sensor B201 II (EHS II)
XGND05	Ground connection W11 or W11 II
XGND06	Ground connection W11 or W11 II
XGND07	Ground connection W11 or W11 II
XGND08	Ground connection W11 or W11 II
XK18 II/30	1-pin connector for relay K18 II (EHS II) (red lead)
XK18 II/85	1-pin connector for relay K18 II (EHS II) (black lead)
XK18 II/86	1-pin connector for relay K18 II (EHS II) (blue/red lead)
XK18 II/87	1-pin connector for relay K18 II (EHS II) (black lead)
XM01/5	Connector for starter motor M01 (EHS II) (red lead)
XS68 II	6-pin connector for hitch remote control switch S68 II (EHS II)
XS200 II	2-pin connector for raise limiting switch S200 II (EHS II)
XS201 II	3/1-pin connector for raise/lower switch S201 II (EHS II)
XY200 II	4-pin connector for raise solenoid valve Y200 II (EHS II)
XY201 II	3-pin connector for lower solenoid valve Y201 II (EHS II)

References: Component Information - Connectors

- [A210 - EHS II Control Panel](#)
- [F24 II - Fuse for Electronic Hitch Sensing Circuit \(EHS II\)](#)
- [K18 II - Relay of Electronic Hitch Sensing \(EHS II\)](#)
- [X41 II - 4-Pin Interconnection between Wiring Harnesses W11 II/1 and W11 II/2 \(EHS II\)](#)
- [X42 II - 3-Pin Connector for Diagnostic \(EHS II\) to PC](#)
- [X43 II - 2/1-Pin Interconnections between Relay K18 II and Alternator G02 \(+15\)](#)
- [X44 II - 3-Pin Interconnection between EHS II Control Panel A210 and Adapter Wiring Harness W11/3 \(EHS II\)](#)
- [X45 II - 3-Pin Interconnection between EHS II Control Panel A210 and Adapter Wiring Harness W11/4 \(EHS II\)](#)
- [XA210 - 12-Pin Interconnection between EHS II Control Panel A210 and W11 II \(EHS II\)](#)
- [XB200 II - 3-Pin Connector for Position Sensor B200 II \(EHS II\)](#)
- [XB201 II - 3-Pin Connector for Draft Sensor B201 II \(EHS II\)](#)
- [XGND05 - Ground Connection W11 or W11 II](#)

- [XGND06 - Ground Connection W11 or W11 II](#)
- [XGND07 - Ground Connection W11 or W11 II](#)
- [XGND08 - Ground Connection W11 or W11 II](#)
- [XK18 II - 4/1-Pin Connectors for Relay K18 II \(EHS II\)](#)
- [XM01 - Connector for Starter Motor M01](#)
- [XS68 II - 6-Pin Connector for Hitch Remote Control Switch S68 II \(EHS II\)](#)
- [XS200 II - 2-Pin Connector for Raise Limiting Switch S200 II \(EHS II\)](#)
- [XS201 II - 3-Pin Connector for Raise/Lower Switch S201 II \(EHS II\)](#)
- [XY200 II - 4-Pin Connector for Raise Solenoid Valve Y200 II \(EHS II\)](#)
- [XY201 II - 3-Pin Connector for Lower Solenoid Valve Y201 II \(EHS II\)](#)

W12 - Shut-Off System Wiring Harness (EHM)



AT16685

W12 - shut-off system wiring harness (EHM)

LEGEND:

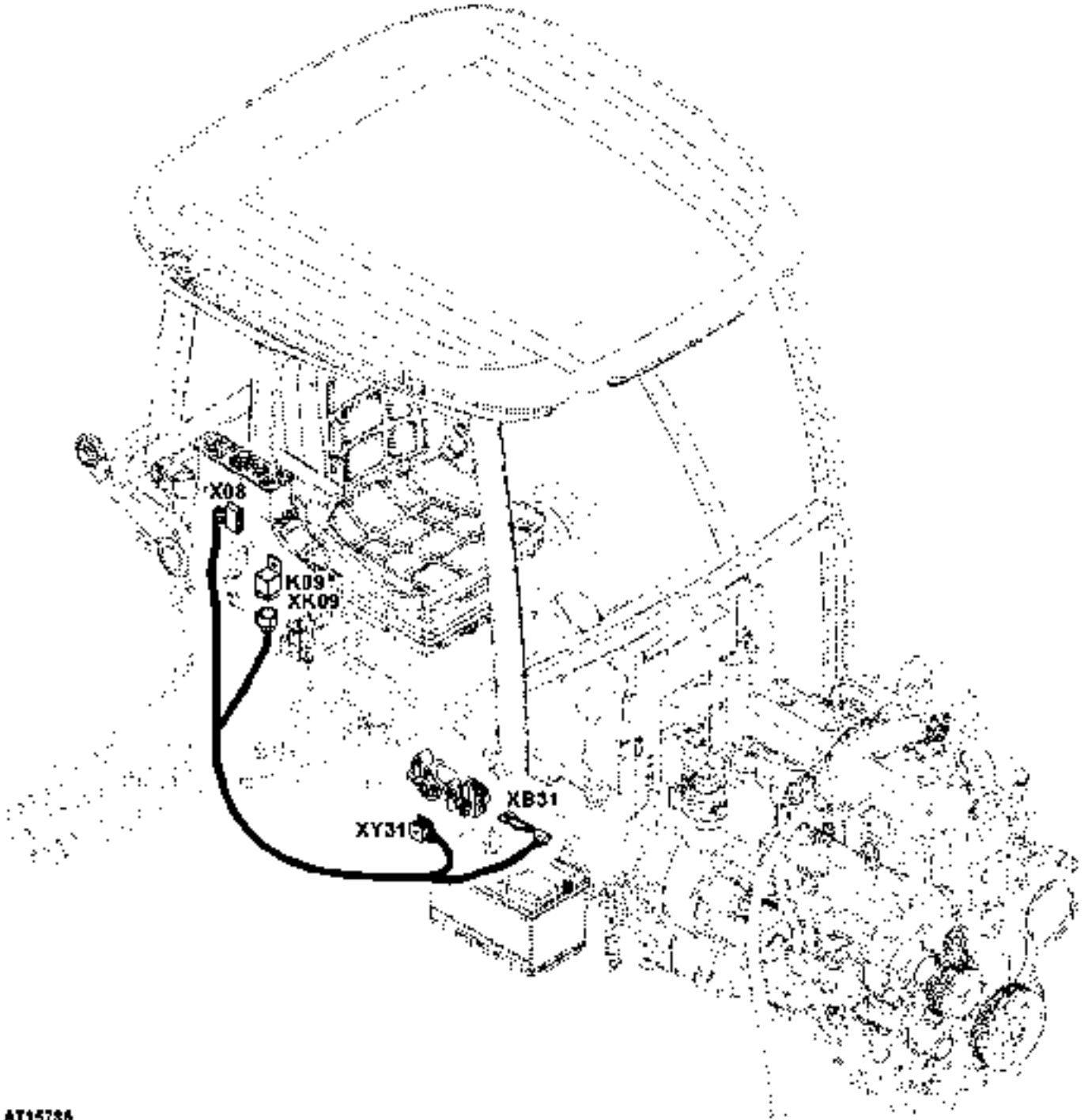
- A301 Relay box of shut-off system (EHM)
- A302 Time-delay switch of shut-off system (EHM)
- F23 7.5 amp fuse for shut-off system circuit (EHM)
- K17 Relay of shut-off system (EHM)
- W12/1 Shut-off system wiring harness (cab side)
- W12/2 Shut-off system wiring harness (engine/transm. side)
- X50 6-pin interconnection between wiring harnesses W12/1 and W12/2
- X51/1 2-pin interconnection to ground between wiring harness W03 and W12
- X51/2 2-pin interconnection to ground between wiring harness W03 and W12
- X52/1 2-pin interconnection between warning light H50 (EHM) and wiring harness W12
- X52/2 2-pin interconnection between warning light H50 (EHM) and wiring harness W12
- X53/1 1-pin interconnection between clutch pedal switch S72 (EHM) and wiring harness W12
- X53/2 1-pin interconnection between clutch pedal switch S72 (EHM) and wiring harness W12

X54/1	1-pin interconnection between alternator G02 and wiring harness W12
X54/2	1-pin interconnection between alternator G02 and wiring harness W12
XA301	17-pin connector for relay box A301 (EHM)
XA302	5-pin connector for time-delay switch A302 (EHM)
XB300	2-pin connector for transmission oil pressure sensor B300 of forward high clutch (EHM or EHM II)
XB301	2-pin connector for transmission oil pressure sensor B301 of forward low clutch (EHM or EHM II)
XB302	2-pin connector for transmission oil pressure sensor B302 of reverse clutch (EHM or EHM II)
XF23	2-pin connector for fuse F23 of shut-off system circuit (EHM)
XK17	4-pin connector for relay K17 (EHM)
XM01/6	Connector for starter motor M01
XY300	2-pin connector for shut-off solenoid valve Y300 (EHM or EHM II)

References: Component Information - Connectors

- [A301 - Relay Box \(EHM\)](#)
- [A302 - Time-Delay Switch \(EHM\)](#)
- [F23 - Fuse of Shut-Off System Circuit \(EHM\)](#)
- [K17 - Relay of Shut-Off System \(EHM\)](#)
- [X50 - 6-Pin Interconnection between Wiring Harnesses W12/1 and W12/2](#)
- [X51 - 2/2-Pin Interconnections to Ground between Wiring Harness W03 and W12](#)
- [X52 - 2/2-Pin Interconnections between Warning Light H50 \(EHM\) and Wiring Harness W12](#)
- [X53 - 2/1-Pin Interconnections between Clutch Pedal Switch S72 \(EHM\) and Wiring Harness W12](#)
- [X54 - 2/1-Pin Interconnections between Alternator G02 and Wiring Harness W12](#)
- [XA301 - 17-Pin Connector for Relay Box A301 \(EHM\)](#)
- [XA302 - 5-Pin Connector for Time-Delay Switch A302 \(EHM\)](#)
- [XB300 - 2-Pin Connector for Transmission Oil Pressure Sensor B300 of Forward High Clutch \(EHM or EHM II\)](#)
- [XB301 - 2-Pin Connector for Transmission Oil Pressure Sensor B301 of Forward Low Clutch \(EHM or EHM II\)](#)
- [XB302 - 2-Pin Connector for Transmission Oil Pressure Sensor B302 of Reverse Clutch \(EHM or EHM II\)](#)
- [XF23 - 2-Pin Connector for Fuse F23 of Shut-Off System Circuit \(EHM\)](#)
- [XK17 - 4-Pin Connector for Relay K17 \(EHM\)](#)
- [XM01 - Connector for Starter Motor M01](#)
- [XY300 - 2-Pin Connector for Shut-Off Solenoid Valve Y300 \(EHM or EHM II\)](#)

W13 - Trailer Brake Valve Wiring Harness



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W13 - trailer brake valve wiring harness

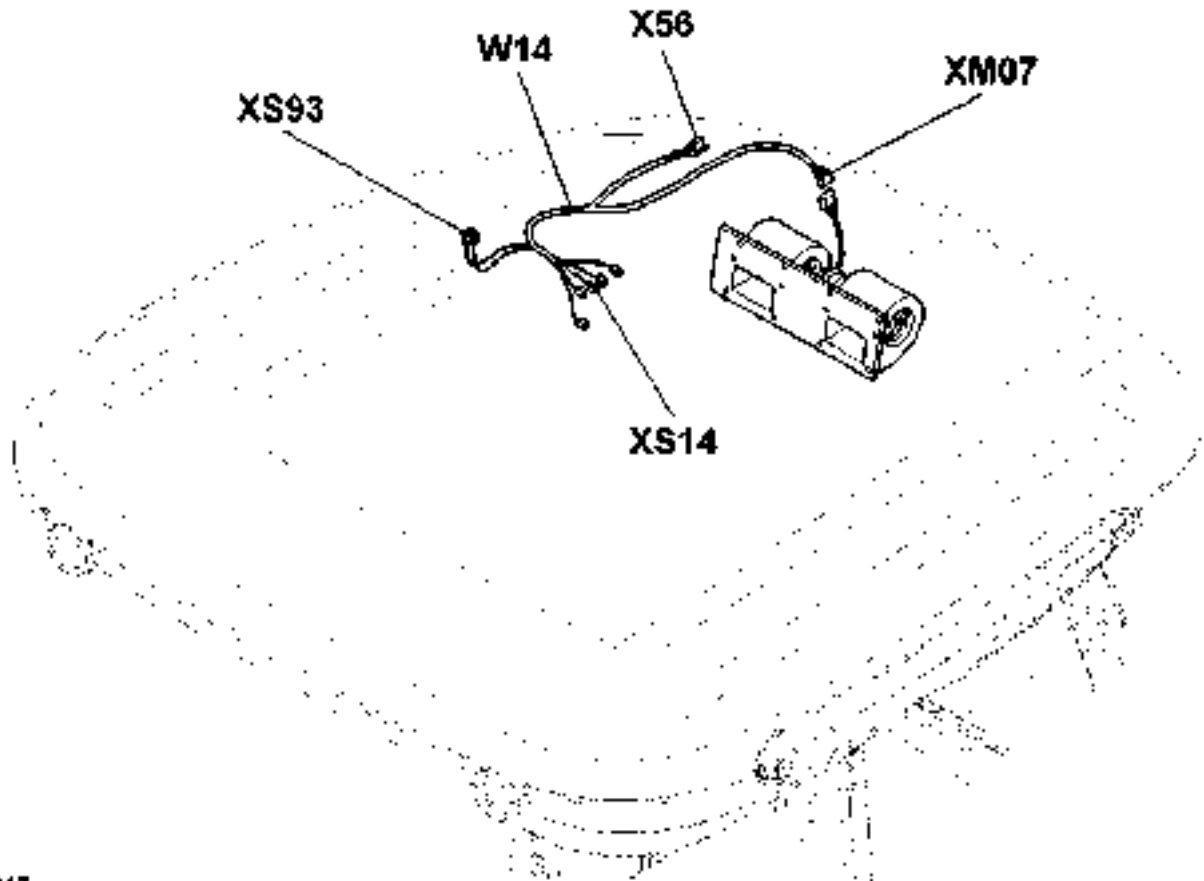
LEGEND:

- K09 Trailer brake relay
- X08 4-pin interconnection between trailer brake wiring harness and W02
- XB31 2/1-pin connectors for trailer brake pressure switch B31
- XK09 5-pin connector for trailer brake relay K09
- XY31 4-pin connector for trailer brake solenoid valve Y31

References: Component Information - Connectors and Components

- [K09 - Trailer Brake Relay](#)
- [X08 - 4-pin Interconnection between Trailer Brake Wiring Harness and W02](#)
- [XB31 - 2/1-Pin Connectors for Trailer Brake Pressure Switch B31](#)
- [XK09 - 5-Pin Connector for Trailer Brake Relay K09](#)
- [XY31 - 4-Pin Connector for Trailer Brake Solenoid Valve Y31](#)

W14 - Fan and Air-Conditioning Wiring Harness



AT17247

W14 - Fan and air-conditioning wiring harness

LEGEND:

- W14 Fan and air-conditioning wiring harness
- X56 2/1-pin interconnections between W05 and W14
- XM07 3-pin connectors for fan motor M07
- XS14 5/1-pin connectors for fan switch S14
- XS93 2/1-pin connectors for heating and air-conditioning switch S93

References: Component Information - Connectors and Components

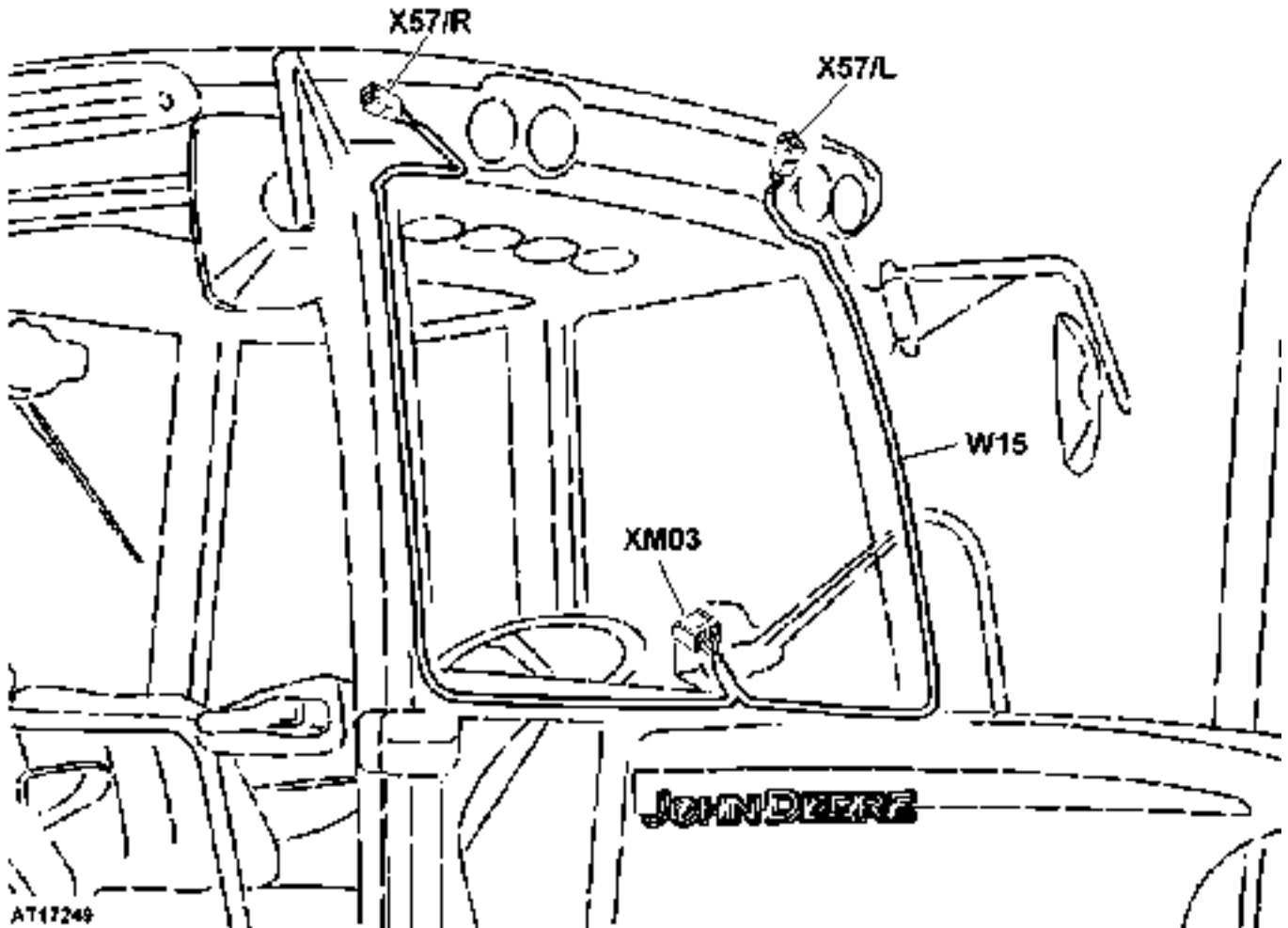
[X56 - 2/1-Pin Interconnections between Wiring Harnesses W05 and W14](#)

[XM07 - 3-Pin Connectors for Fan Motor M07](#)

[XS14 - 5/1-Pin Connectors for Fan Switch S14](#)

[XS93 - 2/1-Pin Connectors for Heating and Air-Conditioning Switch S93](#)

W15 - Front Wiper Motor Wiring Harness



W15 - Front wiper motor wiring harness

LEGEND:

- W15 Front wiper motor wiring harness
- X57/L 2-pin interconnections between wiring harnesses W05 and W15
- X57/R 2-pin interconnections between wiring harnesses W05 and W15
- XM03 4-pin connector for front wiper motor M03

[X57/L - 2-Pin Interconnections between Wiring Harnesses W05 and W15](#)

[X57/R - 2-Pin Interconnections between Wiring Harnesses W05 and W15](#)

[XM03 - 4-Pin Connector for Front Wiper Motor M03](#)

Group 115 - Component Information - Electrical Parts

Electrical Parts - Component Location (Summary of References)

- [A200 - EHS Control Panel](#)
- [A200/2 - EHS II Control Panel](#)
- [A300 - EHM Control Panel](#)
- [A301 - Relay Box \(EHM\)](#)
- [A302 - Time-Delay Switch \(EHM\)](#)

- [B01 - Ambient Temperature Sensor](#)
- [B02 - Air Filter Restriction Sensor](#)
- [B03 - Fuel Level Sensor](#)
- [B04 - Engine Oil Pressure Switch](#)
- [B05 - Parking Brake Switch](#)
- [B06 - Transmission Speed Sensor](#)
- [B07 - PTO Speed Selection Switch](#)
- [B08 - PTO Neutral Start Switch](#)
- [B15 - Air-Conditioning Pressure Switch](#)
- [B31 - Trailer Brake Pressure Switch](#)
- [B36 - Neutral Start Switch](#)
- [B56/1 - Coolant Temperature Sensor \(3-Cylinder only\)](#)
- [B56/2 - Coolant Temperature Sensor \(4-Cylinder only\)](#)
- [B60 - Transmission Oil Temperature Sensor](#)
- [B63 - High Range/Low Range Switch on Transmission \(24/12-Speed Transmission only\)](#)
- [B64 - Reverse Drive Lever Switch](#)
- [B65 - Clutch Pedal Potentiometer](#)
- [B69 - Brake Oil Level sensor](#)
- [B72 - Engine Speed Sensor](#)
- [B73 - Oil Filter Restriction Sensor \(24/12-Speed Transmission only\)](#)
- [B112 - Brake Pedal Switches](#)
- [B200 - Position Sensor \(EHS or EHS II\)](#)
- [B201 - Draft Sensor \(EHS or EHS II\)](#)
- [B300 - Transmission Oil Pressure Sensor of Forward High Clutch \(EHM\)](#)
- [B301 - Transmission Oil Pressure Sensor of Forward Low Clutch \(EHM\)](#)
- [B302 - Transmission Oil Pressure Sensor of Reverse Clutch \(EHM\)](#)

- [E01 - H4 Headlight r.h.](#)
- [E02 - H4 Headlight l.h.](#)
- [E03/1 - Clearance Light l.h. \(Tractors with Cab\)](#)
- [E03/2 - Clearance Light l.h. \(Tractors without Cab\)](#)
- [E04/1 - Clearance Light r.h. \(Tractors with Cab\)](#)
- [E04/2 - Clearance Light r.h. \(Tractors without Cab\)](#)
- [E07 - H4 Farm Headlight l.h.](#)

- [E08 - H4 Farm Headlight r.h.](#)
- [E11/L - Rear Work Light l.h.](#)
- [E11/R - Rear Work Light r.h.](#)
- [E12 - Dome Light](#)
- [E13 - Tail Light l.h.](#)
- [E14 - Tail Light r.h.](#)
- [E18/1L - Front Work Light l.h. \(inner\)](#)
- [E18/1R - Front Work Light r.h. \(inner\)](#)
- [E18/2L - Front Work Light l.h. \(outer\)](#)
- [E18/2R - Front Work Light r.h. \(outer\)](#)
- [E21 - License Plate Light](#)
- [E27 - Beacon Light](#)

- [F00 - Main Fuse for Main Wiring Circuit](#)
- [F01 to F15 - Fuse Box](#)
- [F16 - Main Fuse for Cab Wiring Circuit](#)
- [F17 to F22 - Cab Fuse Box](#)
- [F23 - Fuse for Electrical Circuit of Shut-Off System \(EHM\)](#)
- [F24 - Fuse for Electronic Hitch Sensing Circuit \(EHS or EHS II\)](#)

- [G01 - Battery](#)
- [G02 - Alternator](#)

- [H01 - Horn](#)
- [H32 - Stop Light l.h.](#)
- [H33 - Stop Light r.h.](#)
- [H34/1 - Turn Signal Light l.h. \(Tractors with Cab\)](#)
- [H34/2 - Turn Signal Light l.h. \(Front Side\) \(Tractors without Cab\)](#)
- [H35 - Turn Signal Light l.h. \(Rear side\)](#)
- [H44/1 - Turn Signal Light r.h. \(Tractors with Cab\)](#)
- [H44/2 - Turn Signal Light r.h. \(Front Side\) \(Tractors without Cab\)](#)
- [H45 - Turn Signal Light r.h. \(Rear side\)](#)
- [H50 - Warning Light \(24/12-Speed Transmission only\)](#)

- [K01 - Starter Relay](#)
- [K02 - Hi-Lo Relay \(ON\)](#)
- [K03 - Hi-Lo Relay \(OFF\)](#)
- [K04 - Differential Lock Relay \(ON\)](#)
- [K05 - Front-Wheel Drive Relay](#)
- [K06 - Differential Lock Relay \(OFF\)](#)
- [K07 - Neutral Start Relay](#)
- [K08 - Turn/Warn Signal Relay](#)
- [K09 - Trailer Brake Relay](#)
- [K10 - Intake Air Heater Relay](#)
- [K11 - Relay of Fan Motor \(Tractors with Cab\)](#)
- [K12 - Rear Work Light Relay \(Tractors with Cab\)](#)
- [K13 - Front Work Light Relay \(Tractors with Cab\)](#)
- [K14 - Front-Wheel Drive Relay \(24/12-Speed Transmission only\)](#)

- [K15 - Declutch Relay \(24/12-Speed Transmission only\)](#)
- [K16 - PTO Neutral Start Relay \(24/12-Speed Transmission only\)](#)
- [K17 - Relay of Shut-Off System \(EHM\)](#)
- [K18 - Relay of Electronic Hitch Sensing \(EHS or EHS II\)](#)

- [M01 - Starter Motor](#)
- [M02 - Air-Conditioning Compressor Clutch](#)
- [M03 - Front Wiper Motor](#)
- [M04 - Rear Wiper Motor with Switch](#)
- [M05 - Pump of Washer System](#)
- [M06 - Air Suspension Seat Compressor Motor](#)
- [M07 - Fan Motor](#)

- [R01 - Intake Air Heater \(3-Cyl.\)](#)
- [R15 - Intake Air Heater \(4-Cyl.\)](#)

- [S01 - Main Switch](#)
- [S08 - Turn Signal Light Switch](#)
- [S09 - Light and Horn Switch](#)
- [S11 - H4 Farm Headlight Switch](#)
- [S14 - Fan Switch](#)
- [S15 - Switch for Windshield Wiper and Pump of Washer System](#)
- [S20 - Calibration Switch of Digital Instrument](#)
- [S21 - PTO Mode Switch](#)
- [S22 - Differential Lock Switch](#)
- [S23 - Reversal Switch for Allocation \(Flow Divider Valve\)](#)
- [S36 - Beacon Light Switch](#)
- [S50 - Calibration Switch \(24/12-Speed Transmission only\)](#)
- [S51 - Calibration Switch of Digital Instrument \(24/12-Speed Transmission only\)](#)
- [S52 - Hi-Lo Switch \(low\)](#)
- [S53 - Hi-Lo Switch \(high\)](#)
- [S54 - Declutch Switch on Range Shift Lever \(24/12-Speed Transmission only\)](#)
- [S61 - Rear Work Light with Switch](#)
- [S63 - Front-Wheel Drive Switch](#)
- [S68 - Hitch Remote Control Switch \(EHS or EHS II\)](#)
- [S72 - Clutch Pedal Switch](#)
- [S92/1 - Front Work Light Switch](#)
- [S92/2 - Rear Work Light Switch](#)
- [S93 - Heating and Air-Conditioning Switch](#)
- [S106 - Hazard Warning Light Switch](#)
- [S200 - Raise Limiting Switch \(EHS or EHS II\)](#)
- [S201 - Raise/Lower Switch \(EHS or EHS II\)](#)

- [Y03 - Front-Wheel Drive Solenoid Valve](#)
- [Y05 - Differential Lock Solenoid Valve](#)
- [Y13 - Fuel Shut-Off Solenoid Valve](#)
- [Y23 - Flow Divider Solenoid Valve](#)
- [Y31 - Trailer Brake Solenoid Valve](#)

- [Y44 - Fuel Transfer Pump](#)
- [Y50 - Electro-Hydraulic Hi-Lo Solenoid Valve \(24/24-Speed Transmission only\)](#)
- [Y51 - Reverse Clutch Solenoid Valve \(24/12-Speed Transmission only\)](#)
- [Y52 - Forward Low Clutch Solenoid Valve \(24/12-Speed Transmission only\)](#)
- [Y53 - Forward High Clutch Solenoid Valve \(24/12-Speed Transmission only\)](#)
- [Y200 - Raise Solenoid Valve \(EHS or EHS II\)](#)
- [Y201 - Lower Solenoid Valve \(EHS\)](#)
- [Y201/2 - Lower Solenoid Valve \(EHS II\)](#)
- [Y300 - Shut-Off Solenoid Valve \(EHM\)](#)

A200 - EHS Control Panel



EHS control panel

LEGEND:

A200 EHS control panel

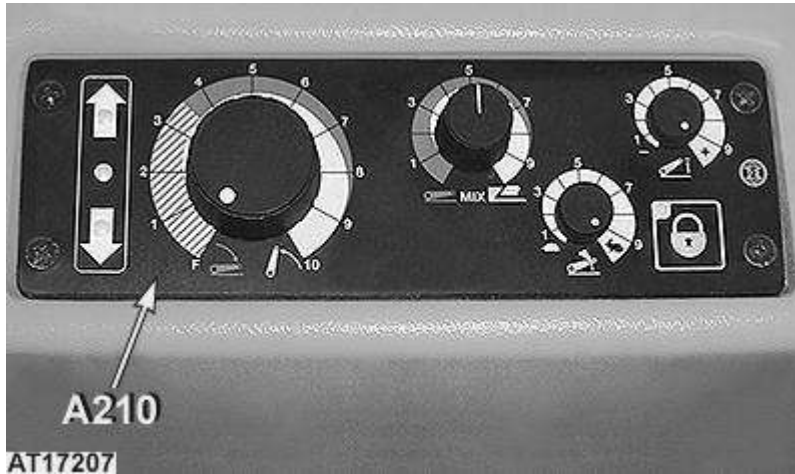
Component Information

Component Information

- Type:** Control panel
- Location:** R.h. side near the operator's seat
- Connector:** [XA200 - Connector for EHS Control Panel A200](#)
- Harness:** [W11 - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- Function:** Hitch controls

For extended checks, see also [SE15A - Electronic Hitch Sensing \(EHS\), Functional Schematic](#) or [SE15A - Electronic Hitch Sensing \(EHS\) \(Summary of References\)](#) in this Section.

A210 - EHS II Control Panel



EHS II control panel

LEGEND:

A210 EHS II control panel

Component Information

Component Information

Type: Control panel

Location: R.h. side near the operator's seat

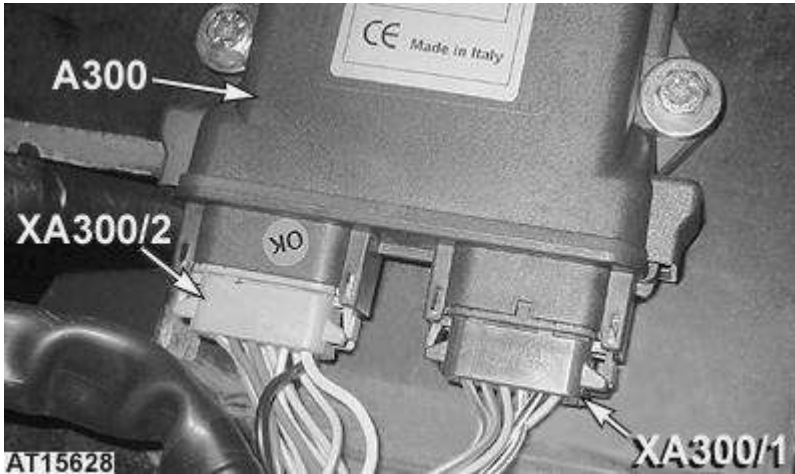
Connector: [XA210 - 12-Pin Interconnection between EHS II Control Panel A210 and W11 II \(EHS II\)](#)

Harness: [W11 II - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Function: Hitch controls

For extended checks, see also [SE15B - Electronic Hitch Sensing \(EHS II\), Functional Schematic](#) or [SE15B - Electronic Hitch Sensing \(EHS II\) \(Summary of References\)](#) in this Section.

A300 - EHM Control Unit



12-pin connector for EHM control unit

LEGEND:

- A300 EHM control unit A300
- XA300/1 12-pin connector for EHM control unit A300 (grey)
- XA300/2 12-pin connector for EHM control unit A300 (black)

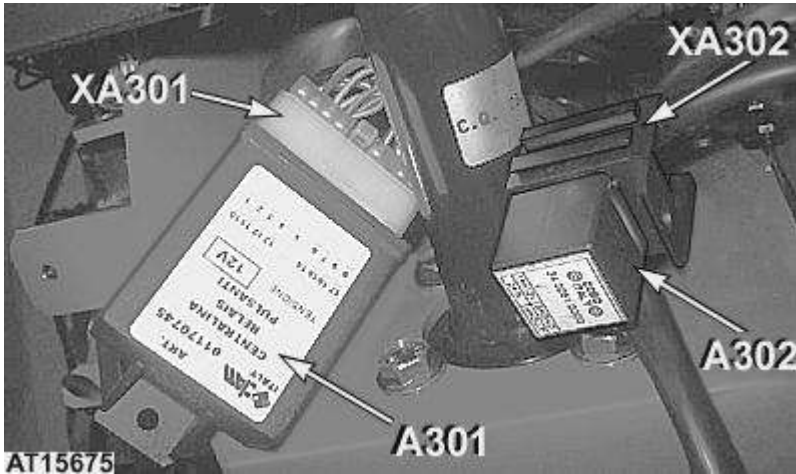
Component Information

Component Information

Type:	Control unit
Location:	Near the fuse box.
Connectors:	XA300/1 - 12-Pin Connector for EHM Control Unit A300 XA300/2 - 12-Pin Connector for EHM Control Unit A300
Harness:	W03 - 24/12-Speed Transmission Wiring Harness
Specifications and Details:	Perform the diagnostic test, see SE26 - Electro-Hydraulic Management (EHM) (Summary of References) in this Section.
Function:	Controls the 24/12-Speed Transmission.

For extended checks, see also [SE26 - Electro-Hydraulic Management \(EHM\) \(Summary of References\)](#) in this Section.

A301 - Relay Box (EHM)



Relay box (EHM)

LEGEND:

- A301 Relay box of shut-off system (EHM)
- A302 Time-delay switch of shut-off system (EHM)
- XA301 17-pin connector for relay box A301 (EHM)
- XA302 5-pin connector for time-delay switch A302 (EHM)

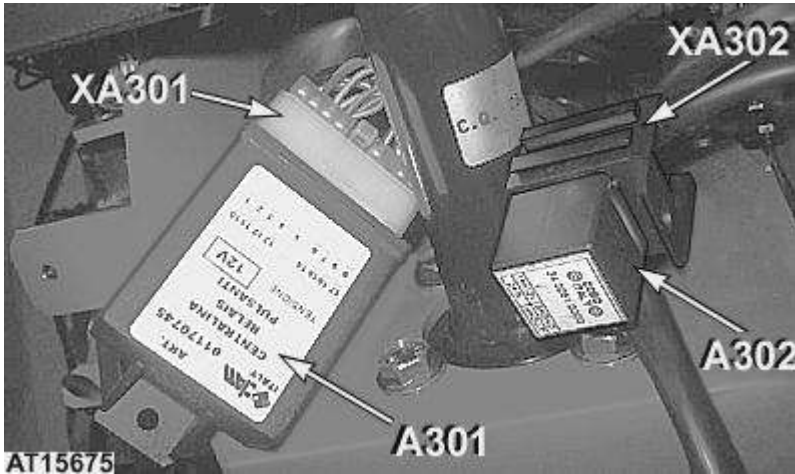
Component Information

Component Information

- Type:** Control unit
- Location:** Behind the molding near the steering column.
- Connector:** [XA301 - 17-Pin Connector for Relay Box A301 \(EHM\)](#)
- Harness:** [W12 - Shut-Off System Wiring Harness \(EHM\)](#)
- Specifications and Details:** Perform the diagnostic test, see [SE26 - Electro-Hydraulic Management \(EHM\) \(Summary of References\)](#) in this Section.
- Function:** Controls the shut-off system (EHM).

For extended checks, see also [SE26 - Shut-Off System \(EHM\), Functional Schematic and Theory of Operation](#) in this Section.

A302 - Time-Delay Switch (EHM)



Time-delay switch (EHM)

LEGEND:

- A301 Relay box of shut-off system (EHM)
- A302 Time-delay switch of shut-off system (EHM)
- XA301 17-pin connector for relay box A301 (EHM)
- XA302 5-pin connector for time-delay switch A302 (EHM)

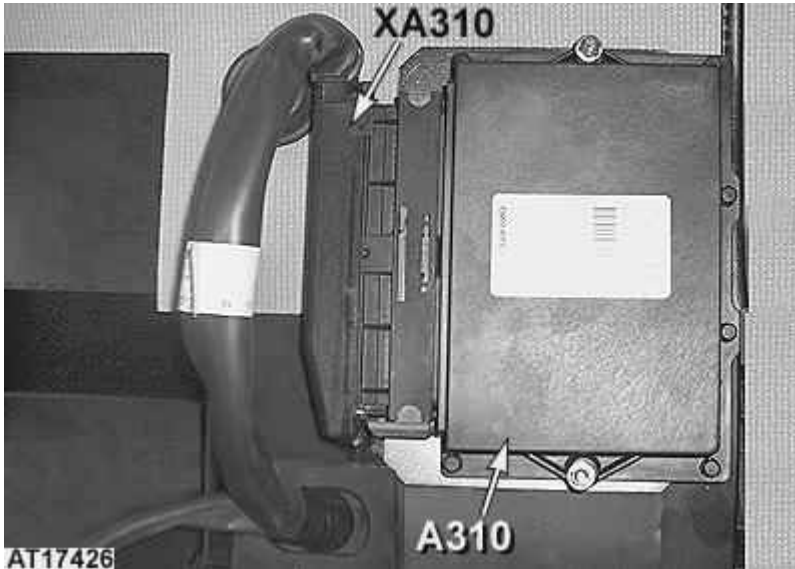
Component Information

Component Information

- Type:** Time-Delay Switch
- Location:** Behind the molding near the steering column.
- Connector:** [XA302 - 5-Pin Connector for Time-Delay Switch A302 \(EHM\)](#)
- Harness:** [W12 - Shut-Off System Wiring Harness \(EHM\)](#)
- Specifications and Details:** Perform the diagnostic test, see [SE26 - Electro-Hydraulic Management \(EHM\) \(Summary of References\)](#) in this Section.
- Function:** Controls the shut-off system (EHM).

For extended checks, see also [SE26 - Shut-Off System \(EHM\), Functional Schematic and Theory of Operation](#) in this Section.

A310 - EHM II Control Unit



EHM II control unit A310

LEGEND:

- A310 EHM II control unit
- XA310 56-pin connector for EHM II control unit A310

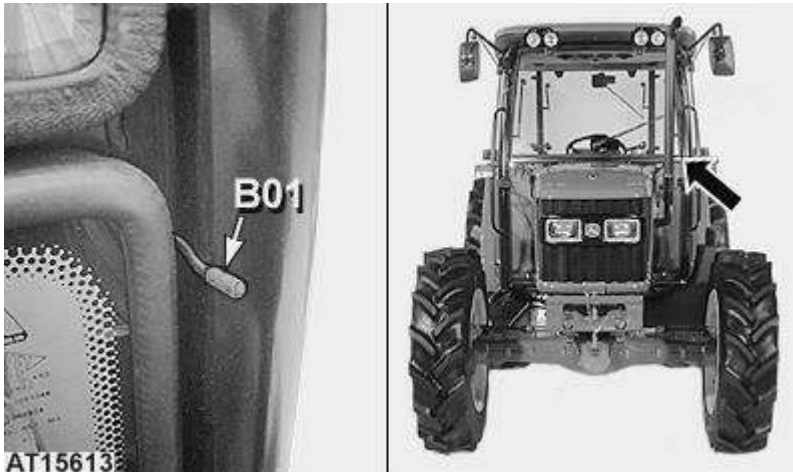
Component Information

Component Information

Type:	Control unit
Location:	Near the fuse box.
Connectors:	XA310 - 56-Pin Connector for EHM II Control Unit A310
Harness:	W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)
Specifications and Details:	Perform the diagnostic test, see SE26B - Electro-Hydraulic Management (EHM II) (Summary of References) in this Section.
Function:	Controls the 24/12-Speed Transmission.

For extended checks, see also [SE26B - Electro-Hydraulic Management \(EHM II\) \(Summary of References\)](#) in this Section.

B01 - Ambient Temperature Sensor



B01 - Ambient temperature sensor

LEGEND:

B01 Ambient temperature sensor

Component Information

Component Information

Type: Sensor

Location: L.h. side on the cab hand rail

Connector: [XB01 - 2-Pin Connector for Ambient Temperature Sensor B01](#)

Harness: [W03 - 24/12-Speed Transmission Wiring Harness](#)

Function: Measures the ambient temperature

For extended checks, see also [SE26 - Electro-Hydraulic Management \(EHM\) \(Summary of References\)](#) in this Section.

B02 - Air Filter Restriction Sensor



Air filter restriction sensor



Air filter restriction sensor

LEGEND:

- B02/1 Air filter restriction sensor (3-cyl.)
- B02/2 Air filter restriction sensor (4-cyl.)

Component Information

Component Information

- Type:** Engine air suction system pressure sensor
- Location:** In the motor air filter, front side
- Connector:** [XB02 - 2/1-Pin Connectors for Air Filter Restriction Sensor B02](#)
- Harness:** [W01 - Engine Wiring Harness](#)
- Specifications and Details:** See component check below:
- Function:** Measures the engine air suction system pressure

Component Check

(1) B02 - Air Filter Restriction Sensor

Action:

→NOTE:

Unplug the air cleaner restriction indicator sensor from the wiring harness.

Use a [JT05791A](#) multimeter to measure continuity between pins A and B of the sending unit.

When pressure-free, the sending unit is open. If the air inlet is blocked while the engine is running, the sending unit is forced to close.

Item	Measurement	Specification
B02 - Air Filter Restriction Sensor		
Sensor closed:	Pressure	94-93kPa (940-930bar) (13.6-13.5psi)

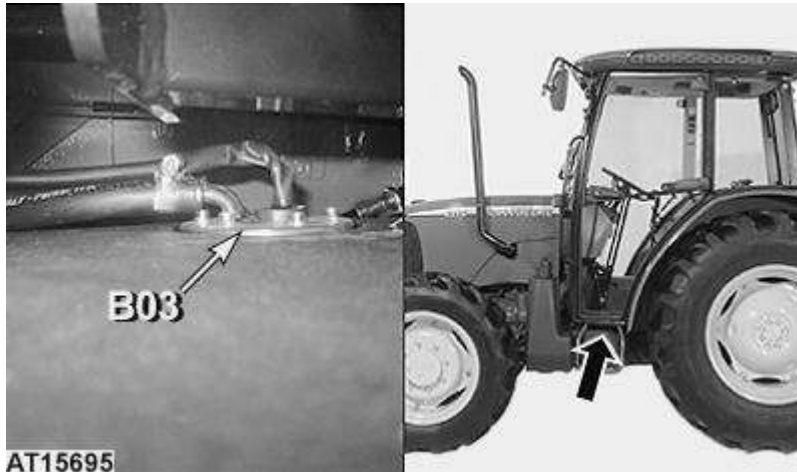
For extended checks, see also [SE02B - Air Filter Restriction Indicator, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES: Sending unit is in good condition.

NO: Replace the sending unit.

B03 - Fuel Level Sensor



Fuel level sensor

LEGEND:

B03 Fuel level sensor

Component Information

Component Information

Type:	Potentiometer
Location:	Fuel tank
Connector:	XB03 - 3-Pin Connector for Fuel Level Sensor B03
Harness:	W02 - Main Wiring Harness
Specifications and Details:	See component check below:
Function:	Measures the fuel level

Component Check

(1) B03 - Fuel Level Sensor

Action:

→NOTE:

Unplug the fuel pump from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and C on the plug of fuel gauge sender:

Item	Measurement	Specification
B03 - Fuel Level Sensor		
Empty tank:	Resistance	315 - 350 ohms
1/4 full tank:	Resistance	180 - 200 ohms
1/2 full tank:	Resistance	113 - 127 ohms
3/4 full tank:	Resistance	61 - 70 ohms
Full tank:	Resistance	4.0 - 6.0 ohms

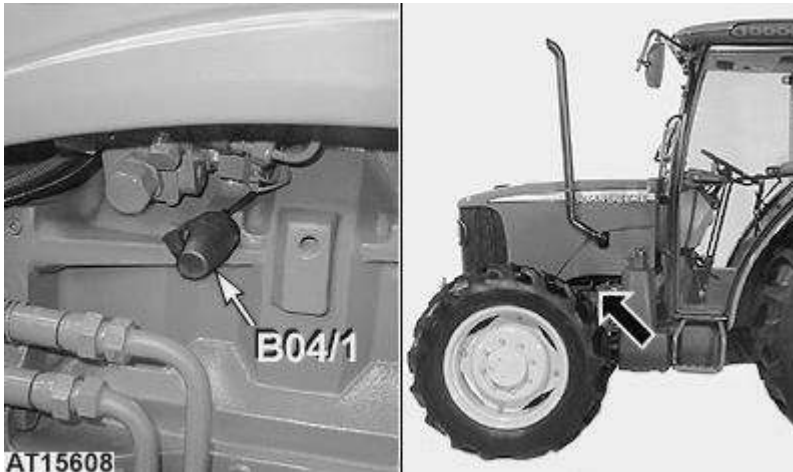
For extended checks, see also [SE02A - Fuel Gauge, Temperature Gauge, Rev Counter, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

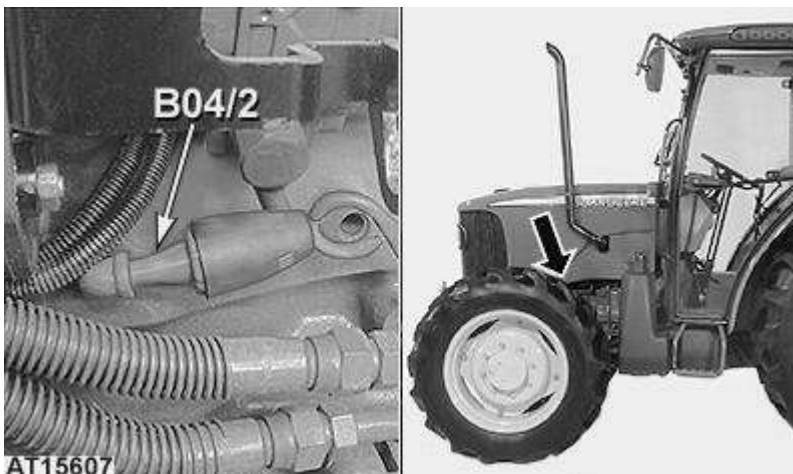
YES: Sending unit is in good condition.

NO: Replace fuel transfer pump.

B04 - Engine Oil Pressure Switch



Engine oil pressure switch (3-cyl.)



Engine oil pressure switch (4-cyl.)

LEGEND:

- B04/1 Engine oil pressure switch (3-cyl.)
- B04/2 Engine oil pressure switch (4-cyl.)

Component Information

Component Information

Type:	Pressure switch
Location:	L.h. side of engine under the injection pump
Connector:	XB04 - 1-Pin Connector for Engine Oil Pressure Switch B04
Harness:	W01 - Engine Wiring Harness
Specifications and Details:	See component check below:
Function:	Measures the engine oil pressure

Component Check

(1) B04 - Engine Oil Pressure Switch

Action:

→NOTE:

Unplug the engine oil pressure switch from the wiring harness.

Use a [JT05791A](#) multimeter to measure continuity between pin A and ground (housing) of the switch:

When pressure-free, the switch is open. It is forced to close while the engine is running.

Item	Measurement	Specification
B04 - Engine oil pressure switch		
Switch open:	Pressure	below 70kPa (0.7bar) (10.15psi)
Switch closed:	Pressure	0-40kPa (0.00-0,40bar) (0.0-5.8psi)

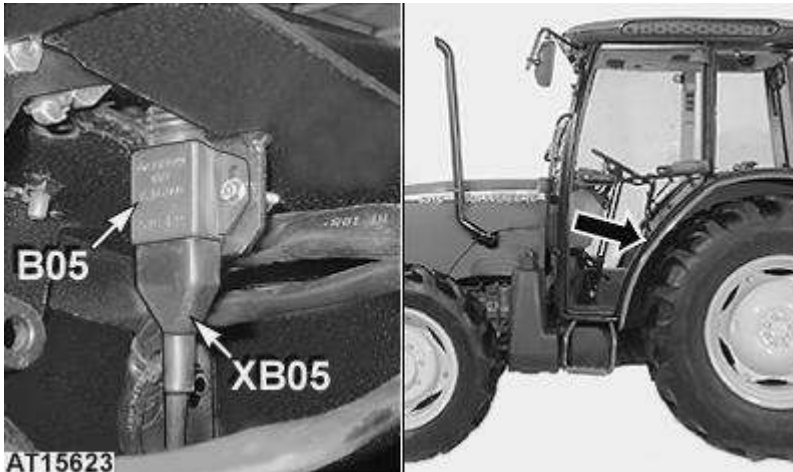
For extended checks, see also [SE02C - Engine Oil Pressure Indicator, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:Switch is in good condition.

NO:Replace the switch.

B05 - Parking Brake Switch



B05 - Parking brake switch

LEGEND:

- B05 Parking brake switch
- XB05 2/1-pin connectors for parking brake switch B05

Component Information

Component Information

- Type:** Switch
- Location:** On the l.h. side, below the cab or the open station
- Connector:** [XB05 - 2/1-Pin Connectors for Parking Brake Switch B05](#)
- Harness:** [W02 - Main Wiring Harness](#)
- Specifications and Details:** See component check below:
- Function:** If the parking brake lever is applied, the control light at the instrument lights up.

Component Check

(1) B05 - Parking Brake Switch

Action:

→NOTE:

Unplug the switch from the wiring harness.

Use a [JT05791A](#) multimeter to measure for continuity between pins C1 and NC and between pins C1 and NO on the switch:

The switch consists of a changeover contact. When actuated, the switch must change over.

Item	Measurement	Specification
B05 - Parking Brake Switch		
Switch not actuated:	Continuity	C1 and NC closed
	Continuity	C1 and NO open
Switch actuated:	Continuity	C1 and NC open
	Continuity	C1 and NO closed

Pins NC and NO should never indicate continuity.

For extended checks, see also [SE16C - Stop Lights, Front-Wheel Drive Circuit and Parking Brake Circuit, Diagnostic Schematic and Circuit Test](#) and [SE16C - Parking Brake, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:Switch is in good condition.

NO:Replace the switch.

B06 - Transmission Speed Sensor



B06 - transmission speed sensor

LEGEND:

B06 Transmission speed sensor

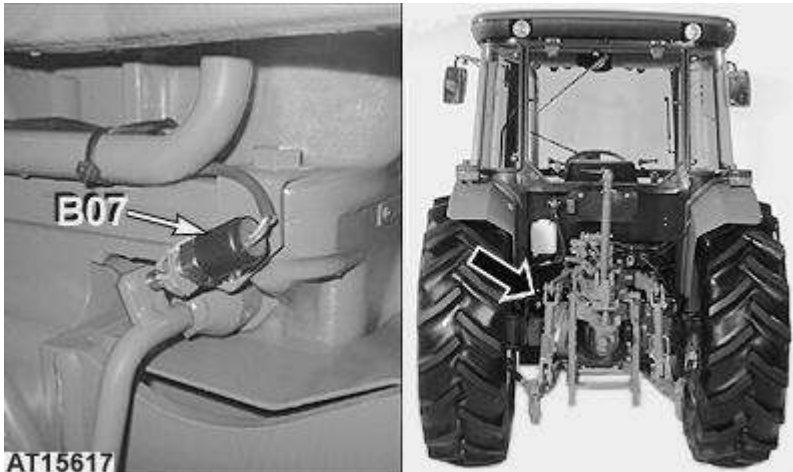
Component Information

Component Information

Type:	Hall effect sensor
Location:	Transmission, r.h. side
Connector:	XB06 - 3-Pin Connector for Transmission Speed Sensor B06
Harness:	W03 - 24/12-Speed Transmission Wiring Harness
Specifications and Details:	Perform function test: SE02E - Transmission Speed Sensor B06, Diagnostic Schematic and Circuit Test
Function:	Measures the rpm of the transmission and sends it to the instrument panel and EHM unit

For extended checks, see also [SE16B - PTO Speed System, Digital Version, Diagnostic Schematic and Circuit Test](#) in this Section.

B07 - PTO Speed Selection Switch



B07 - PTO speed selection switch

LEGEND:

B07 PTO speed selection switch

Component Information

Component Information

Type:	Switch
Location:	Rear l.h. side on the transmission
Connector:	XB07 - 2-Pin Connector for PTO Speed Selection Switch B07
Harness:	W02 - Main Wiring Harness
Specifications and Details:	See component check below:
Function:	Sends the selected PTO speed range to the instrument panel

Component Check

(1) B07 - PTO Speed Selection Switch

Action:

Use a [JT05791A](#) multimeter to measure for continuity between pins A and B on the switch:

The switch consists of a changeover contact. When actuated, the switch must change over.

Item	Measurement	Specification
B07 - PTO Speed Selection Switch		
Switch not actuated:	Continuity	A and B closed
Switch actuated:	Continuity	A and B open

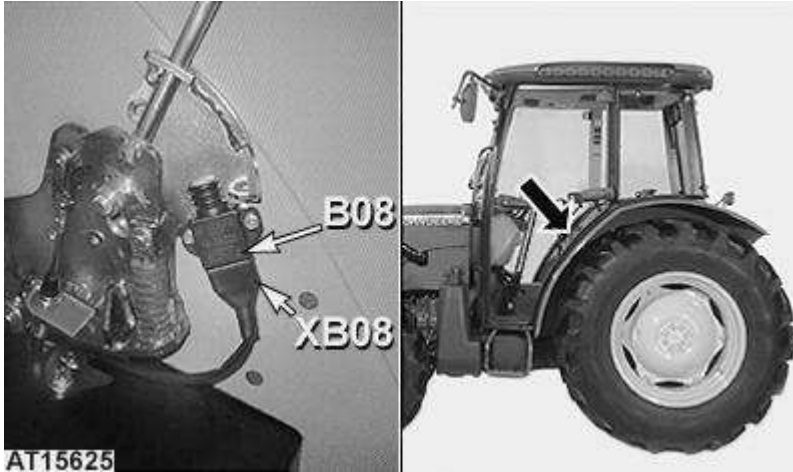
For extended checks, see also [SE16B - PTO Speed System, Digital Version, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:Switch is in good condition.

NO:Replace the switch.

B08 - PTO Safety Switch



B08 - PTO safety switch

LEGEND:

B08 PTO safety switch

XB08 2/1-pin connectors for PTO safety switch B08

Component Information

Component Information

Type:	Switch
Location:	Below the l.h control lever molding near the PTO engagement lever
Connector:	XB08 - 2/1-Pin Connectors for PTO Safety Switch B08
Harness:	W02 - Main Wiring Harness
Specifications and Details:	See component check below:
Function:	If the PTO is engaged, the tractor cannot start.

Component Check

(1) B08 - PTO Safety Switch

Action:

→NOTE:

Unplug the switch from the wiring harness.

Use a [JT05791A](#) multimeter to measure for continuity between pins C1 and NC and between pins C1 and NO on the switch:

The switch consists of a changeover contact. When actuated, the switch must change over.

Item	Measurement	Specification
B08 - PTO Safety Switch		
Switch not actuated:	Continuity	C1 and NC closed
	Continuity	C1 and NO open
Switch actuated:	Continuity	C1 and NC open
	Continuity	C1 and NO closed

Pins NC and NO should never indicate continuity.

For extended checks, see also [SE16B - PTO Warning System, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:Switch is in good condition.

NO:Replace the switch.

B15 - Air-Conditioning Pressure Switch



B15 - Air-conditioning pressure switch

LEGEND:

B15 Air-conditioning pressure switch

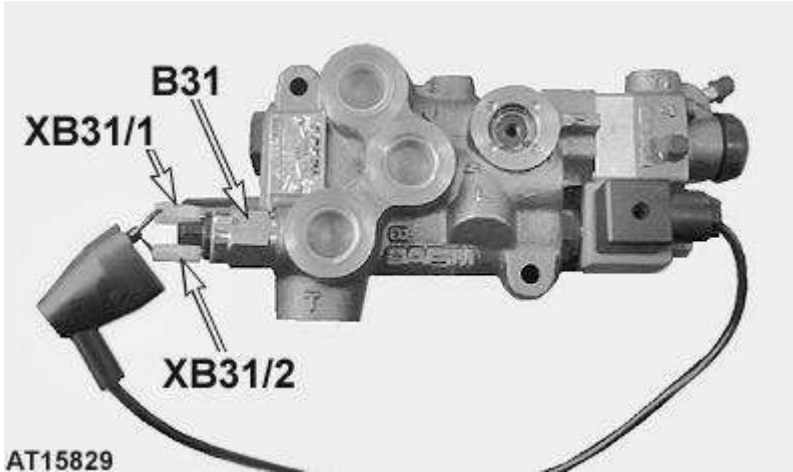
Component Information

Component Information

Type:	High/low pressure switch
Location:	In front of the radiator
Connector:	XB15 - 2-Pin Connector for Air-Conditioning Pressure Switch B15
Harness:	W04 - Engine/Cab Wiring Harness
Specifications and Details:	Switch closes between: 2.1 bar (30.5 psi) - 25 bar (362 psi) Tolerance \pm 10%
Function:	Controls the air-conditioning compressor clutch M02

For extended checks, see also [SE10B - Air-Conditioning System, Diagnostic Schematic and Circuit Test](#) in this Section.

B31 - Trailer Brake Pressure Switch



Trailer brake pressure switch

LEGEND:

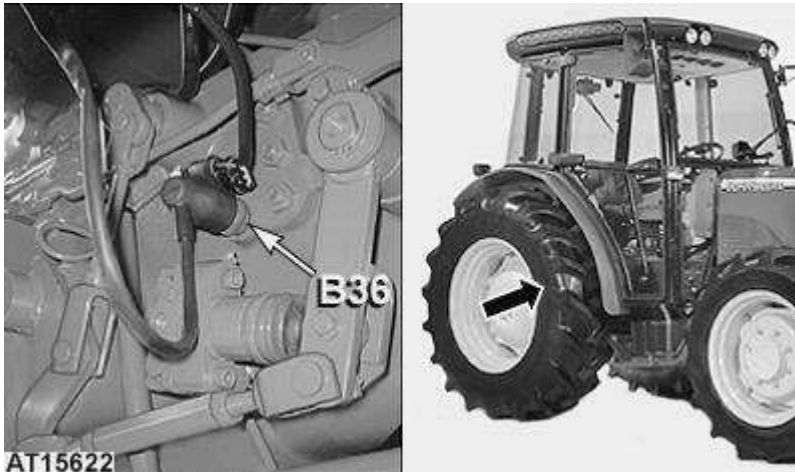
- B31 Trailer brake pressure switch
- XB31/1 1-pin connector for trailer brake pressure switch B31 (pink/blue lead)
- XB31/2 1-pin connector for trailer brake pressure switch B31 (black lead)

Component Information

Component Information

- Type:** Switch
- Location:** Below r.h. step
- Connector:** [XB31 - 2/1-Pin Connectors for Trailer Brake Pressure Switch B31](#)
- Harness:** [W13 - Trailer Brake Valve Wiring Harness](#)

B36 - Neutral Start Switch



B36 - Neutral start switch

LEGEND:

B36 Neutral start switch

Component Information

Component Information

Type:	Switch
Location:	L.h. side of the transmission near the rear axle
Connector:	XB36 - 2/1-Pin Connectors for Neutral Start Switch B36
Harness:	W02 - Main Wiring Harness
Specifications and Details:	See component check below:
Function:	Interrupts the start sequence if a gear is selected

Component Check

(1) B36 - Neutral Start Switch

Action:

→NOTE:

Unplug the neutral start switch from the wiring harness.

Use a [JT05791A](#) multimeter to measure continuity between pins A and B of the switch.

Engaging a gear with the gear shift lever opens the switch. The switch must close when the gear shift lever is moved to neutral position.

Item	Measurement	Specification
B36 - Neutral Start Switch		
Gear engaged:	Continuity	A and B open
Neutral Position:	Continuity	A and B closed

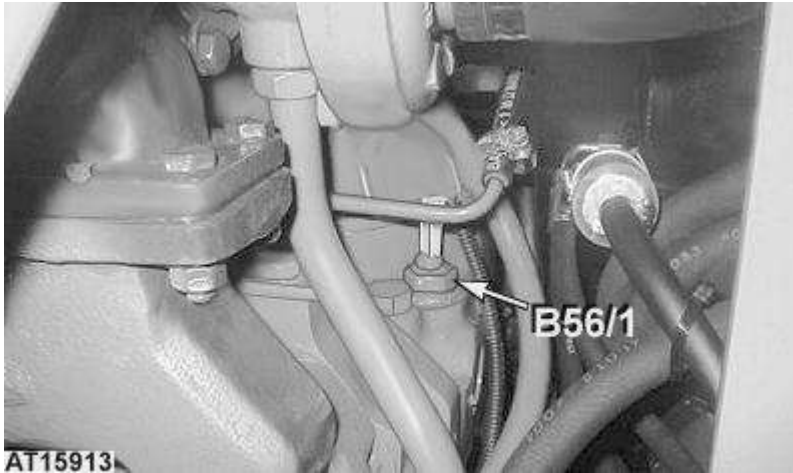
For extended checks, see also [SE01B - Starting System without EHM, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:Switch is in good condition.

NO:Replace the switch.

B56/1 - Coolant Temperature Sensor (3-Cylinder only)



Coolant temperature sensor B56/1 (3-cyl. only)

LEGEND:

B56/1 Coolant temperature sensor (3-cyl. only)

Component Information

Component Information

Type:	Thermostat
Location:	Below valve cover, l.h. side
Connector:	XB56/1 - 1-Pin Connector for Coolant Temperature Sensor B56/1 (3-Cyl. only)
Harness:	W01 - Engine Wiring Harness
Specifications and Details:	See component check below:
Function:	Sends information to the instrument about the coolant temperature.

Component Check

(1) B56/1 - Coolant Temperature Sensor (3-Cylinder only)

Action:

→NOTE:

Unplug the coolant temperature sending unit from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance on the sending unit:

The relevant resistance values should be registered at the following temperatures.

Item	Measurement	Specification
B56/1 - Coolant Temperature Sensor (3-Cylinder only)		
Resistance value:	at 25°C (77°F)	approx. 560 ohms
	at 60°C (140°F)	approx. 134 ohms
	at 90°C (194°F)	approx. 51.2 ohms
	at 100°C (212°F)	approx. 38.5 ohms

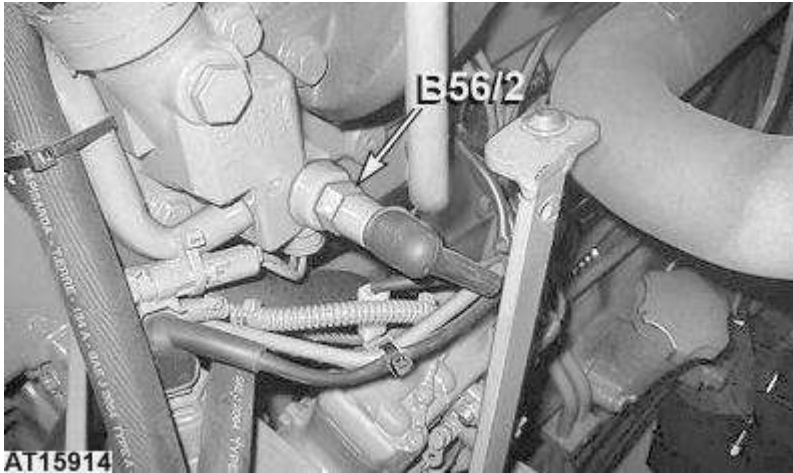
For extended checks, see also [SE02A - Fuel Gauge, Temperature Gauge, Rev Counter, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES: Sending unit is in good condition.

NO: Replace the sending unit.

B56/2 - Coolant Temperature Sensor (4-Cylinder only)



Coolant temperature sensor (4-cyl. only)

LEGEND:

B56/2 Coolant temperature sensor (4-cyl. only)

Component Information

Component Information

Type:	Thermostat
Location:	Coolant thermostat housing, l.h. side
Connector:	XB56/2 - 2-Pin Connector for Coolant Temperature Sensor B56/2 (4-cyl. only)
Harness:	W01 - Engine Wiring Harness
Specifications and Details:	See component check below:
Function:	Sends information to the instrument about the coolant temperature

Component Check

(1) B56/2 - Coolant Temperature Sensor (4-Cylinder only)

Action:

→NOTE:

Unplug the coolant temperature sending unit from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B on the sending unit:

The relevant resistance values should be registered at the following temperatures.

Item	Measurement	Specification
B56/2 - Coolant Temperature Sensor (4-Cylinder only)		
Resistance value:	at 25°C (77°F)	approx. 560 ohms
	at 60°C (140°F)	approx. 134 ohms
	at 90°C (194°F)	approx. 51.2 ohms
	at 100°C (212°F)	approx. 38.5 ohms

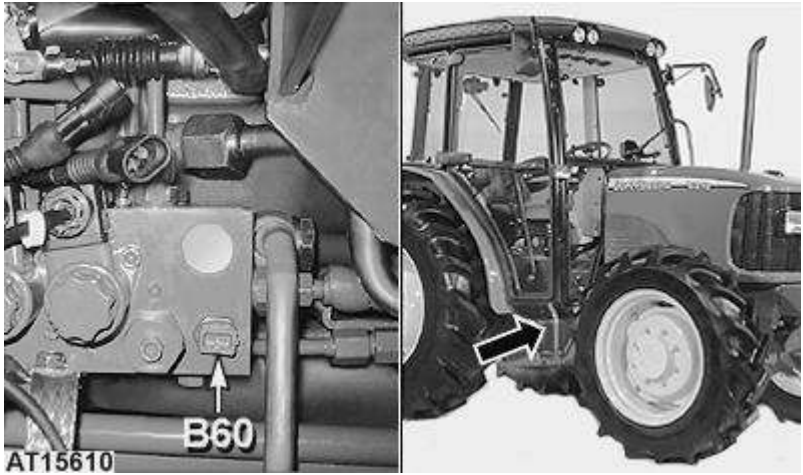
For extended checks, see also [SE02A - Fuel Gauge, Temperature Gauge, Rev Counter, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES: Sending unit is in good condition.

NO: Replace the sending unit.

B60 - Transmission Oil Temperature Sensor (EHM or EHM II)



Transmission oil temperature sensor (EHM or EHM II)

LEGEND:

B60 Transmission oil temperature sensor (EHM or EHM II)

Component Information

Component Information

- Type:** Thermostat switch
- Location:** Behind the r.h. side step
- Connector:** [XB60 - 2-Pin Connector for Transmission Oil Temperature Sensor B60 \(EHM or EHM II\)](#)
- Harness:** [W03 - 24/12-Speed Transmission Wiring Harness](#)
or
[W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- Specifications and Details:** See component check below:
- Function:** Sends the transmission oil temperature to EHM or EHM II control unit.

Component Check

(1) B60 - Transmission Oil Temperature Sensor (EHM or EHM II)

Action:

→NOTE:

Unplug the transmission oil temperature sensor from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B on the sending unit:

The relevant resistance values should be registered at the following temperatures.

Item	Measurement	Specification
B60 - Transmission Oil Temperature Sensor (EHM or EHM II)		
Resistance value:	at 20°C (68°F)	approx. 2500 ohms
	at 80°C (194°F)	approx. 330 ohms

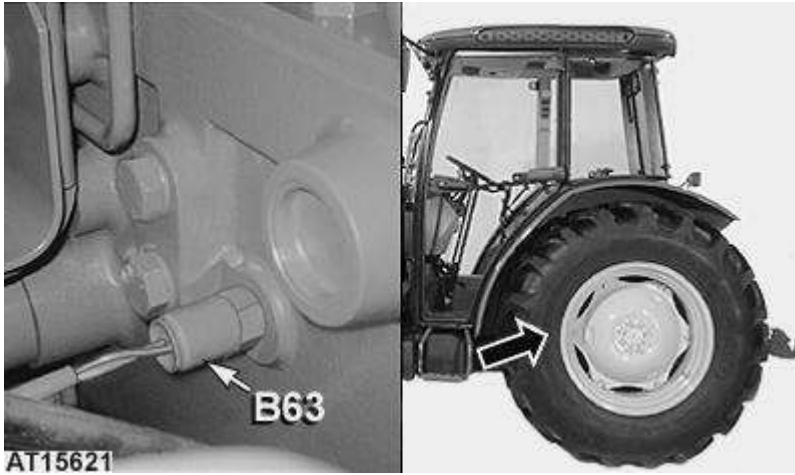
For extended checks, see also [SE26A - Transmission Oil Temperature Sensor and Calibration Switch \(EHM\), Diagnostic Schematic and Circuit Test](#) or [SE26B - Transmission Oil Temperature Sensor and Calibration Switch \(EHM II\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES: Sending unit is in good condition.

NO: Replace the sending unit.

B63 - High Range/Low Range Switch on Transmission (EHM or EHM II)



B63 - High range/low range switch on Transmission (EHM or EHM II)

LEGEND:

B63 High range/low range switch on transmission (EHM or EHM II)

Component Information

Component Information

Type:	Range switch
Location:	L.h. side of the transmission near the rear axle
Connector:	XB63 - 2-Pin Connector for High Range/Low Range Switch B63 on Transmission (EHM or EHM II)
Harness:	W03 - 24/12-Speed Transmission Wiring Harness or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)
Specifications and Details:	See component check below:
Function:	Input of selected range into EHM or EHM II control unit.

Component Check

(1) B63 - High Range/Low Range Switch on Transmission (EHM or EHM II)

Action:

→NOTE:

Unplug the high range/low range switch from the wiring harness.

Use a [JT05791A](#) multimeter to measure continuity between pins A and B of the switch.

Item	Measurement	Specification
B63 - High Range/Low Range Switch on Transmission (EHM or EHM II)		
Low range engaged:	Continuity	A and B closed
High range engaged:	Continuity	A and B opened

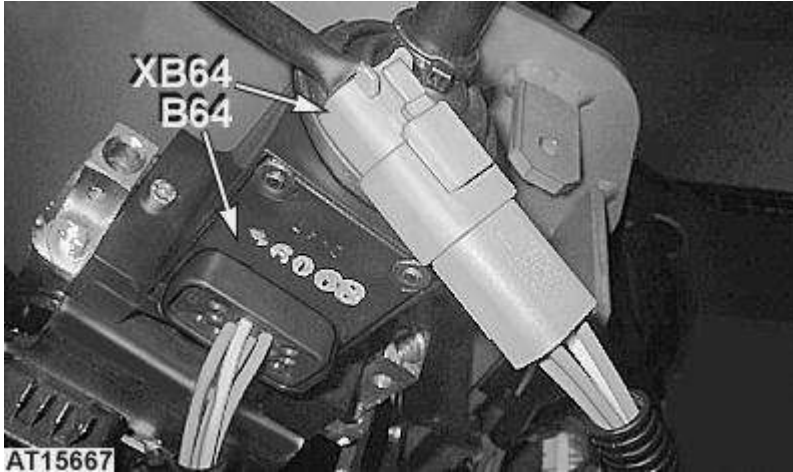
For extended checks, see also [SE26A - High Range/Low Range Switch on Transmission \(EHM\), Diagnostic Schematic and Circuit Test](#) or [SE26B - High Range/Low Range Switch on Transmission \(EHM II\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:Switch is in good condition.

NO:Replace the switch.

B64 - Reverse Drive Lever Switch (EHM or EHM II)



4-pin connector for reverse drive lever switch B64 (EHM or EHM II)

LEGEND:

- XB64 4-pin connector for reverse drive lever switch B64 (EHM or EHM II)
- B64 Reverse drive lever switch (EHM or EHM II)

Component Information

Component Information

- Type:** Switch
- Location:** Steering wheel l.h. side
- Connector:** [XB64 - 4-Pin Connector for Reverse Drive Lever Switch B64 \(EHM or EHM II\)](#)
- Harness:** [W03 - 24/12-Speed Transmission Wiring Harness](#)
or
[W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- Specifications and Details:** See component check below:
- Function:** Sends information about the travel direction to the EHM or EHM II control unit.

Component Check

(1) B64 - Reverse Drive Lever Switch (EHM or EHM II)

Action:

→NOTE:

Unplug the reverse drive lever switch from the wiring harness.

Use a [JT05791A](#) multimeter to measure continuity between pins + and R, N and F of the switch.

Item	Measurement	Specification
B64 - Reverse Drive Lever Switch (EHM or EHM II)		
Drive Lever in Forward Position:	Continuity	+ and F closed + and R opened + and N opened
Drive Lever in Neutral Position:	Continuity	+ and F opened + and R opened + and N closed
Drive Lever in Reverse Position:	Continuity	+ and F opened + and R closed + and N opened

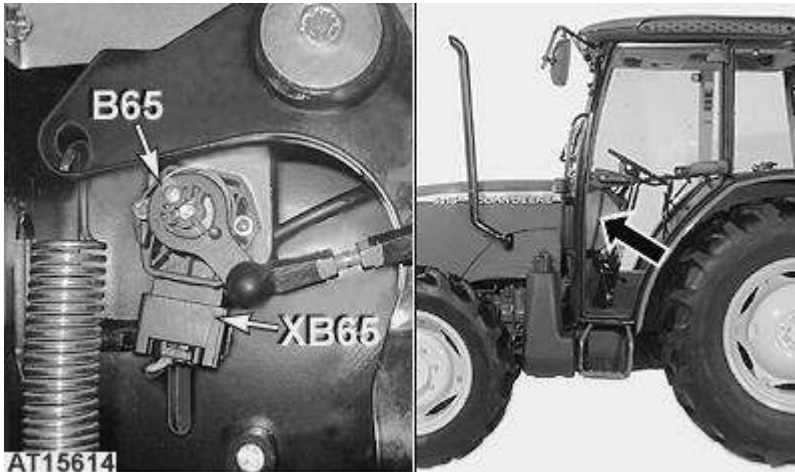
For extended checks, see also [SE26A - Reverse Drive Lever \(EHM\), Diagnostic Schematic and Circuit Test](#) or [SE26B - Reverse Drive Lever \(EHM II\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:Switch is in good condition.

NO:Replace the switch.

B65 - Clutch Pedal Potentiometer



Clutch pedal potentiometer (EHM or EHM II)

LEGEND:

- B65 Clutch pedal potentiometer (EHM or EHM II)
- XB65 6-pin connector for clutch pedal potentiometer B65 (EHM or EHM II)

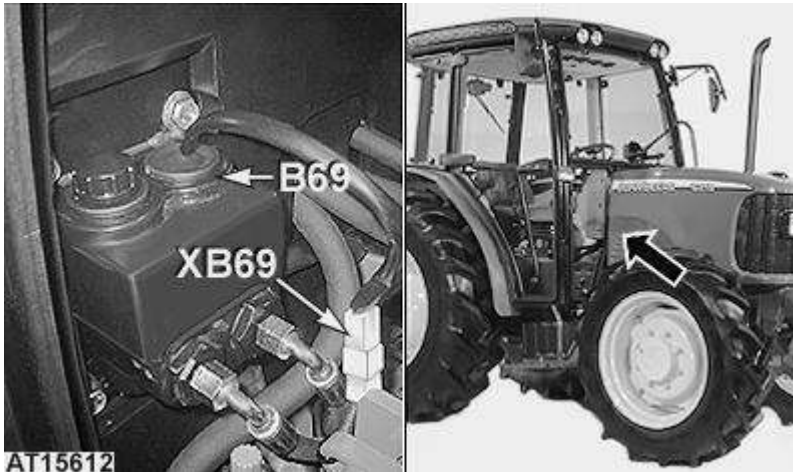
Component Information

Component Information

- Type:** Potentiometer
- Location:** l.h. side above the clutch pedal
- Connector:** [XB65 - 6-Pin Connector for Clutch Pedal Potentiometer B65 \(EHM or EHM II\)](#)
- Harness:** [W03 - 24/12-Speed Transmission Wiring Harness](#)
or
[W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- Specifications and Details:** Perform function test:
[SE26A - Clutch Pedal Potentiometer \(EHM\), Diagnostic Schematic and Circuit Test](#)
or
[SE26B - Clutch Pedal Potentiometer \(EHM II\), Diagnostic Schematic and Circuit Test](#)
- Function:** Sends information about the position of the clutch pedal to EHM or EHM II control unit.

For extended checks, see also [SE26A - Clutch Pedal Potentiometer \(EHM\), Diagnostic Schematic and Circuit Test](#) or [SE26B - Clutch Pedal Potentiometer \(EHM II\), Diagnostic Schematic and Circuit Test](#) in this Section.

B69 - Brake Oil Level Sensor



B69 - brake oil level sensor

LEGEND:

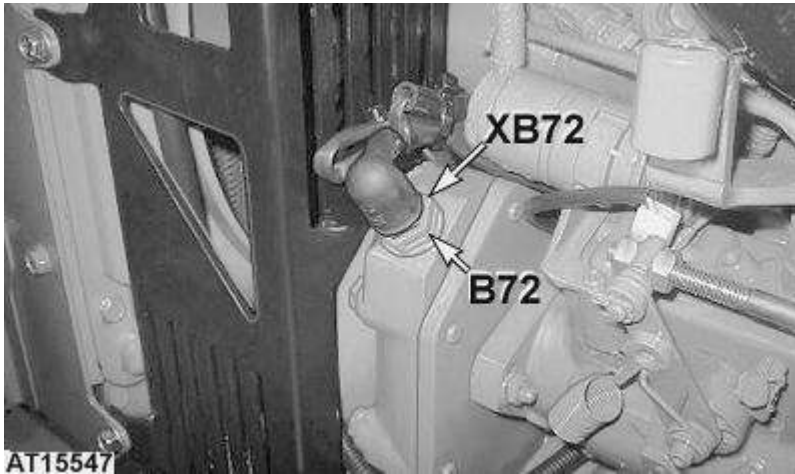
- B69 Brake oil level sensor
- XB69 2/1-pin connectors for brake oil level sensor B69

Component Information

Component Information

- Type:** Sensor
- Location:** Brake valve housing
- Connector:** [XB69 - 2/1-Pin Connectors for Brake Oil Level Sensor B69](#)
- Harness:** [W01 - Engine Wiring Harness](#)
- Function:** Measures the oil level of the brake system

B72 - Engine Speed Sensor



2-pin connector and engine speed sensor B72

LEGEND:

- XB72 2-pin connector for engine speed sensor B72
- B72 Engine speed sensor

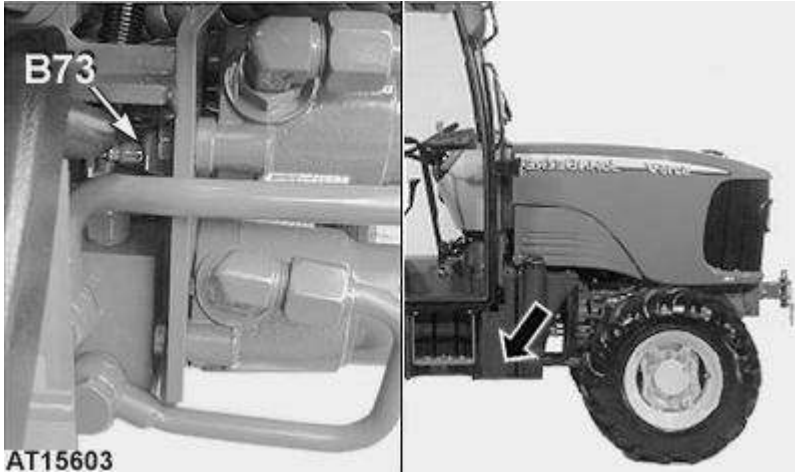
Component Information

Component Information

Type:	Inductive sensor
Location:	L.h.. side of the engine
Connector:	XB72 - 2-Pin Connector for Engine Speed Sensor B72
Harness:	W01 - Engine Wiring Harness
Specifications and Details:	Perform function test: SE02F - Engine Speed Sensor B72, Diagnostic Schematic and Circuit Test
Function:	Measures the rpm of the engine and sends it to the instrument panel.

For extended checks, see also [SE02A - Fuel Gauge, Temperature Gauge, Rev Counter, Diagnostic Schematic and Circuit Test](#) in this Section.

B73 - Oil Filter Restriction Sensor (EHM or EHM II)



B73 - oil filter restriction sensor (EHM or EHM II)

LEGEND:

B73 Oil filter restriction sensor (EHM or EHM II)

Component Information

Component Information

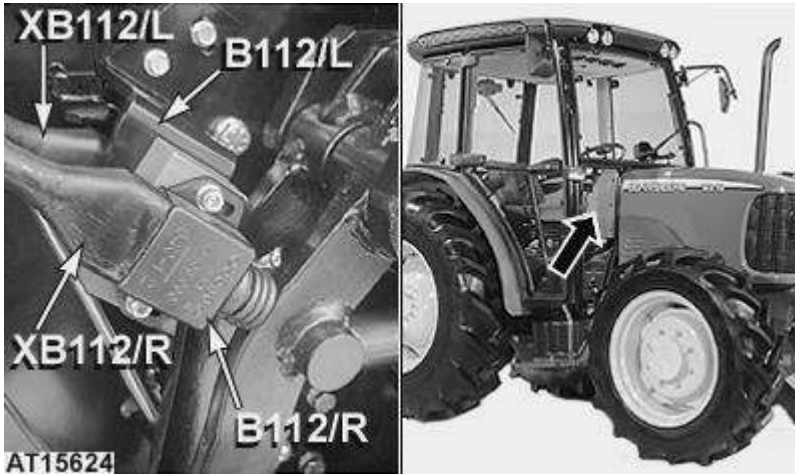
Type:	Thermostat and pressure switch
Location:	Behind the r.h. side step in the oil filter
Connector:	XB73 - 2-Pin Connector for Oil Filter Restriction Sensor B73 (EHM or EHM II)
Harness:	W03 - 24/12-Speed Transmission Wiring Harness or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)
Specifications and Details:	See table below:
Max. Torque:	15 N•m (11 lb-ft)
Function:	Monitors oil filter back-pressure. The integrated temperature sensor prevents signal transfer to the warning light at temperatures below 50°C (122°F).

Specifications of B73

Pressure	Temperature	Continuity available	Continuity not available
over 2.4 bar (34.8 psi)	less than 50°C (122°F)	—	X
over 2.4 bar (34.8 psi)	over 50°C (122°F)	X	—
less than 2.4 bar (34.8 psi)	less than 50°C (122°F)	—	X
less than 2.4 bar (34.8 psi)	over 50°C (122°F)	—	X

For extended checks, see also [SE26A - Warning Light and Oil Filter Restriction Sensor \(EHM\), Diagnostic Schematic and Circuit Test](#) or [SE26B - Warning Light and Oil Filter Restriction Sensor \(EHM II\), Diagnostic Schematic and Circuit Test](#) in this Section.

B112 - Brake Pedal Switches



B112 - Brake pedal switches

LEGEND:

- B112/L Brake pedal switch l.h.
- B112/R Brake pedal switch r.h.
- XB112/L 3/1-pin connectors for l.h. brake pedal switch B112/L
- XB112/R 3/1-pin connectors for r.h. brake pedal switch B112/R

Component Information

Component Information

- Type:** Switch
- Location:** Near the brake pedal
- Connector:** [XB112 - 3/1-Pin Connectors for Brake Pedal Switches B112](#)
- Harness:** [W02 - Main Wiring Harness](#)
- Specifications and Details:** See component check below:
- Function:** If the brake pedal is pressed, the following components are engaged or disengaged:
 - Engages the stop lights
 - Engages the front-wheel drive
 - Disengages the differential lock

Component Check

(1) B112 - Brake Pedal Switches

Action:

Use a [JT05791A](#) multimeter to measure for continuity between the inner pins and the outer pins on the switch:

The switch consists of a changeover contact. When actuated, the switch must change over.

Item	Measurement	Specification
B112 - Brake Pedal Switches		
Switch not actuated:	Continuity	inner pins closed outer pins open
Switch actuated:	Continuity	outer pins closed inner pins open

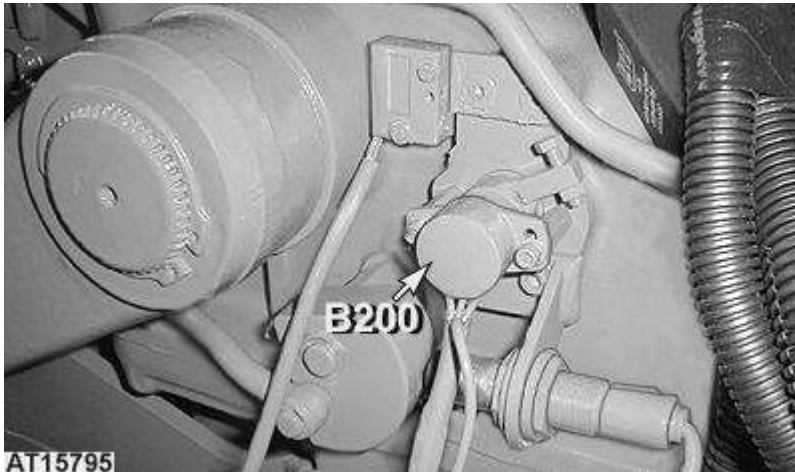
For extended checks, see also [SE16C - Stop Lights, Front-Wheel Drive Circuit and Parking Brake Circuit, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES: Switch is in good condition.

NO: Replace the switch.

B200 - Position Sensor (EHS)



Position sensor (EHS)

LEGEND:

B200 Position sensor (EHS)

Component Information

Component Information

Type:	Sensor
Location:	Near the hitch r.h.
Connector:	XB200 - 3-Pin Connector for Position Sensor B200 (EHS)
Harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS)
Specifications and Details:	See component check below:
Function:	Sends information about the hitch position

Component Check

(1) B200 - Position Sensor (EHS)

Action:

→NOTE:

Unplug the position sensor from the wiring harness.

Use a [JT05791A](#) multimeter to measure for resistance between pins "V+" , "S" and "V0" on the sensor:

The value between measuring points "V+" and "V0" has to be the same as between "V+" and "S" and also between "S" and "V0" . Tolerance between the values is approximately $\pm 10\%$.

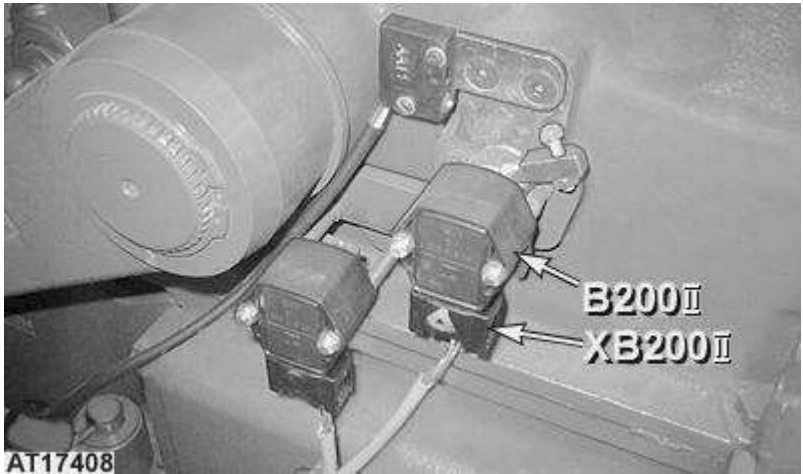
For extended checks, see also [SE15A - Position Sensor B200 \(EHS\), Diagnostic Schematic and Circuit Test](#) or [SE15A - Electronic Hitch Sensing \(EHS\) \(Summary of References\)](#) in this Section.

Result:

YES:Sensor is in good condition.

NO:Replace the sensor.

B200 II - Position Sensor (EHS II)



Position sensor (EHS II)

LEGEND:

- B200 II Position sensor (EHS II)
- XB200 II 6-pin connector for position sensor B200 II (EHS II)

Component Information

Component Information

- Type:** Sensor
- Location:** Near the hitch r.h.
- Connector:** [XB200 II - 6-Pin Connector for Position Sensor B200 II \(EHS II\)](#)
- Harness:** [W11 II - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)
- Specifications and Details:** See component check below:
- Function:** Sends information about the hitch position

Component Check

(1) B200 II - Position Sensor (EHS II)

Action:

→NOTE:

Unplug the position sensor from the wiring harness.

Use a [JT05791A](#) multimeter to measure for resistance between pins "V+" , "S" and "V0" on the sensor:

The value between measuring points "V+" and "V0" has to be the same as between "V+" and "S" and also between "S" and "V0" . Tolerance between the values is approximately $\pm 10\%$.

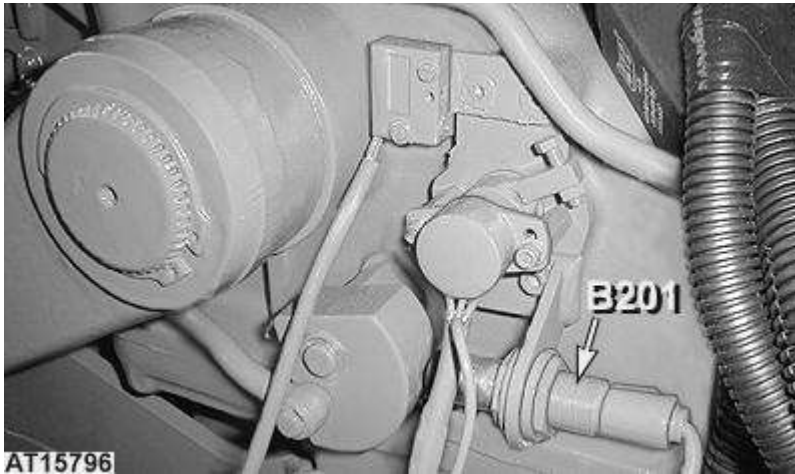
For extended checks, see also [SE15B - Position Sensor B200 II \(EHS II\), Diagnostic Schematic and Circuit Test](#) or [SE15B - Electronic Hitch Sensing \(EHS II\) \(Summary of References\)](#) in this Section.

Result:

YES:Sensor is in good condition.

NO:Replace the sensor.

B201 - Draft Sensor (EHS)



Draft sensor (EHS)

LEGEND:

B201 Draft sensor (EHS)

Component Information

Component Information

Type:	Sensor
Location:	Near the hitch r.h.
Connector:	XB201 - 3-Pin Connector for Draft Sensor B201 (EHS)
Harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS)
Specifications and Details:	See component check below:
Function:	Measures the draft of the hitch

Component Check

(1) B201 - Draft Sensor (EHS)

Action:

→NOTE:

Unplug the draft sensor from the wiring harness.

Use a [JT05791A](#) multimeter to measure for resistance between pins "V+" , "S" and "V0" on the sensor:

The value between measuring points "V+" and "V0" has to be the same as between "V+" and "S" and also between "S" and "V0" . Tolerance between the values is approximately $\pm 10\%$.

For extended checks, see also [SE15A - Draft Sensor B201 \(EHS\), Diagnostic Schematic and Circuit Test](#) or [SE15A - Electronic Hitch Sensing \(EHS\) \(Summary of References\)](#) in this Section.

Result:

YES:Sensor is in good condition.

NO:Replace the sensor.

B201 II - Draft Sensor (EHS II)



Draft sensor (EHS II)

LEGEND:

- B201 II Draft sensor (EHS II)
- XB201 II 6-pin connector for draft sensor B201 II (EHS II)

Component Information

Component Information

- Type:** Sensor
- Location:** Near the hitch r.h.
- Connector:** [XB201 II - 6-Pin Connector for Draft Sensor B201 II \(EHS II\)](#)
- Harness:** [W11 II - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)
- Specifications and Details:** See component check below:
- Function:** Measures the draft of the hitch

Component Check

(1) B201 II - Draft Sensor (EHS II)

Action:

→NOTE:

Unplug the draft sensor from the wiring harness.

Use a [JT05791A](#) multimeter to measure for resistance between pins "V+" , "S" and "V0" on the sensor:

The value between measuring points "V+" and "V0" has to be the same as between "V+" and "S" and also between "S" and "V0" . Tolerance between the values is approximately $\pm 10\%$.

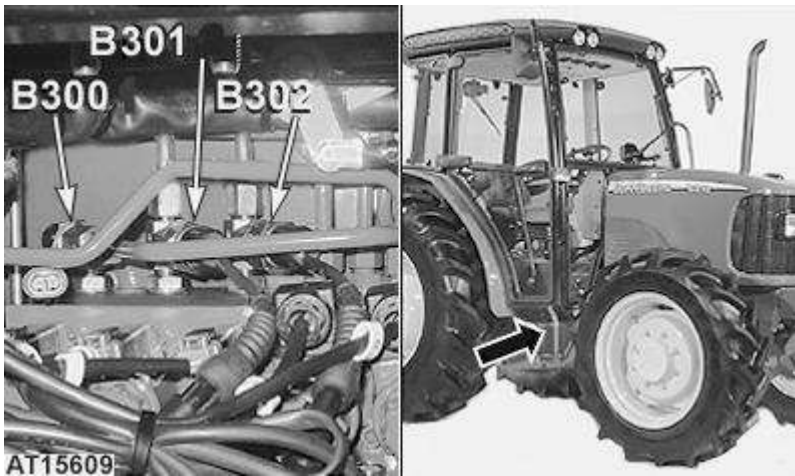
For extended checks, see also [SE15B - Draft Sensor B201 II \(EHS II\), Diagnostic Schematic and Circuit Test](#) or [SE15B - Electronic Hitch Sensing \(EHS II\) \(Summary of References\)](#) in this Section.

Result:

YES:Sensor is in good condition.

NO:Replace the sensor.

B300 - Transmission Oil Pressure Sensor of Forward High Clutch (EHM or EHM II)



Transmission oil pressure sensors (EHM or EHM II)

LEGEND:

- B300 Transmission oil pressure sensor of forward high clutch (EHM or EHM II)
- B301 Transmission oil pressure sensor of forward low clutch (EHM or EHM II)
- B302 Transmission oil pressure sensor of reverse clutch (EHM or EHM II)

Component Information

Component Information

- Type:** Pressure sensor
- Location:** R.h. side behind the step.
- Connector:** [XB300 - 2-Pin Connector for Transmission Oil Pressure Sensor B300 of Forward High Clutch \(EHM or EHM II\)](#)
or
[W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- Harness:** [W12 - Shut-Off System Wiring Harness \(EHM\)](#)
- Specifications and Details:** See component check below:
- Function:** The sensor checks the transmission oil pressure and gives input to the time-delay switch A302 (EHM) or to EHM II control unit A310.

Component Check

(1) B300 - Transmission Oil Pressure Sensor of Forward High Clutch (EHM or EHM II)

Action:

→NOTE:

Unplug the transmission oil pressure sensor from the wiring harness.

Use a [JT05791A](#) multimeter to measure for continuity between pins A and B on the sending unit:

When pressure-free, the sending unit is closed. It is forced to open while the engine is running.

Item	Measurement	Specification
B300 - Transmission Oil Pressure Sensor of Forward High Clutch (EHM or EHM II)		
Sensor closed:	Pressure	below 220 kPa (2.2 bar) (32psi)
Sensor open:	Pressure	over 220 kPa (2.2 bar) (32 psi)

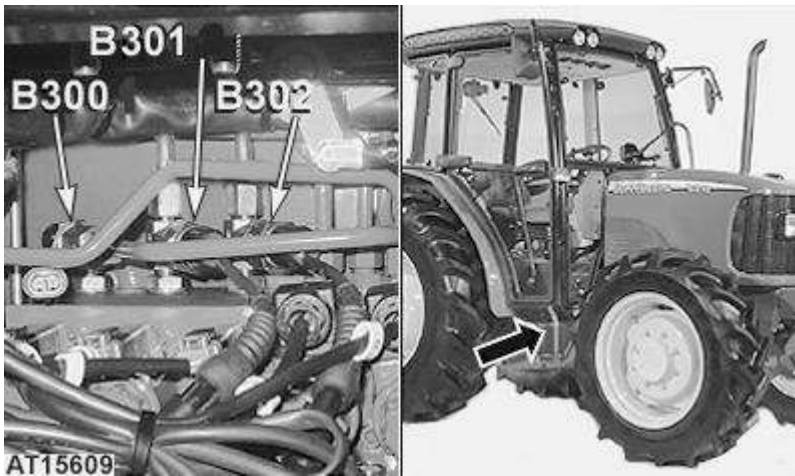
For extended checks, see also [SE26A - Transmission Oil Pressure Sensors of Shut-Off System \(EHM\), Diagnostic Schematic and Circuit Test](#) or [SE26B - Transmission Oil Pressure Sensors \(EHM II\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES: Sending unit is in good condition.

NO: Replace the sending unit.

B301 - Transmission Oil Pressure Sensor of Forward Low Clutch (EHM or EHM II)



Transmission oil pressure sensors (EHM or EHM II)

LEGEND:

- B300 Transmission oil pressure sensor of forward high clutch (EHM or EHM II)
- B301 Transmission oil pressure sensor of forward low clutch (EHM or EHM II)
- B302 Transmission oil pressure sensor of reverse clutch (EHM or EHM II)

Component Information

Component Information

- Type:** Pressure sensor
- Location:** R.h. side behind the step.
- Connector:** [XB301 - 2-Pin Connector for Transmission Oil Pressure Sensor B301 of Forward Low Clutch \(EHM or EHM II\)](#)
- Harness:** [W12 - Shut-Off System Wiring Harness \(EHM\)](#)
or
[SE26B - Clutch Pedal Potentiometer \(EHM II\), Diagnostic Schematic and Circuit Test](#)
- Specifications and Details:** See component check below:
- Function:** The sensor checks the transmission oil pressure and gives input to the time-delay switch A302 (EHM) or to EHM II control unit A310.

Component Check

(1) B301 - Transmission Oil Pressure Sensor of Forward Low Clutch (EHM or EHM II)

Action:

→NOTE:

Unplug the transmission oil pressure sensor from the wiring harness.

Use a [JT05791A](#) multimeter to measure for continuity between pins A and B on the sending unit:

When pressure-free, the sending unit is closed. It is forced to open while the engine is running.

Item	Measurement	Specification
B301 - Transmission Oil Pressure Sensor of Forward Low Clutch (EHM or EHM II)		
Sensor closed:	Pressure	below 220 kPa (2.2 bar) (32 psi)
Sensor open:	Pressure	over 220 kPa (2.2 bar) (32 psi)

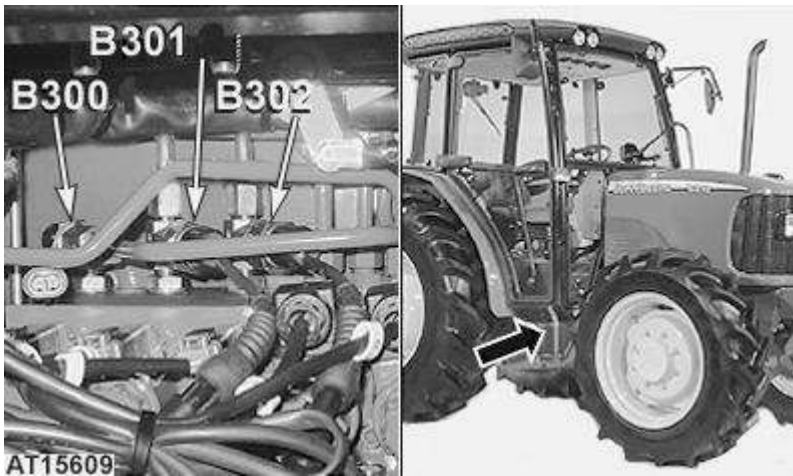
For extended checks, see also [SE26A - Transmission Oil Pressure Sensors of Shut-Off System \(EHM\), Diagnostic Schematic and Circuit Test](#) or [SE26B - Transmission Oil Pressure Sensors \(EHM II\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES: Sending unit is in good condition.

NO: Replace the sending unit.

B302 - Transmission Oil Pressure Sensor of Reverse Clutch (EHM or EHM II)



Transmission oil pressure sensors (EHM or EHM II)

LEGEND:

- B300 Transmission oil pressure sensor of forward high clutch (EHM or EHM II)
- B301 Transmission oil pressure sensor of forward low clutch (EHM or EHM II)
- B302 Transmission oil pressure sensor of reverse clutch (EHM or EHM II)

Component Information

Component Information

- Type:** Pressure sensor
- Location:** R.h. side behind the step.
- Connector:** [XB302 - 2-Pin Connector for Transmission Oil Pressure Sensor B302 of Reverse Clutch \(EHM or EHM II\)](#)
- Harness:** [W12 - Shut-Off System Wiring Harness \(EHM\)](#)
or
[W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- Specifications and Details:** See component check below:
- Function:** The sensor checks the transmission oil pressure and gives input to the time-delay switch A302 (EHM) or to EHM II control unit A310.

Component Check

(1) B302 - Transmission Oil Pressure Sensor of Reverse Clutch (EHM or EHM II)

Action:

→NOTE:

Unplug the transmission oil pressure sensor from the wiring harness.

Use a [JT05791A](#) multimeter to measure for continuity between pins A and B on the sending unit:

When pressure-free, the sending unit is closed. It is forced to open while the engine is running.

Item	Measurement	Specification
B302 - Transmission Oil Pressure Sensor of Reverse Clutch (EHM or EHM II)		
Sensor closed:	Pressure	below 220 kPa (2.2 bar; 32 psi)
Sensor open:	Pressure	over 220 kPa (2.2 bar; 32 psi)

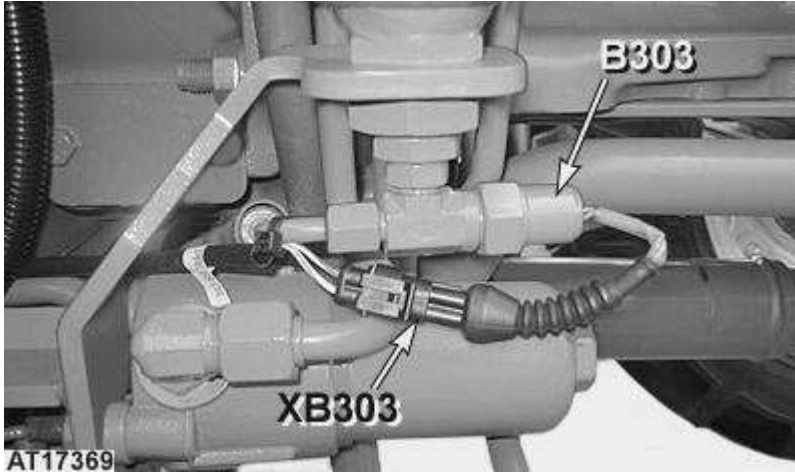
For extended checks, see also [SE26A - Transmission Oil Pressure Sensors of Shut-Off System \(EHM\), Diagnostic Schematic and Circuit Test](#) or [SE26B - Transmission Oil Pressure Sensors \(EHM II\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES: Sending unit is in good condition.

NO: Replace the sending unit.

B303 - EHM II System Pressure Sensor



EHM II system pressure sensor B303

LEGEND:

- B303 EHM II system pressure sensor
- XB303 2-pin connector for EHM II system pressure sensor B303

Component Information

Component Information

- Type:** Pressure sensor
- Location:** R.h. side behind the step.
- Connector:** [XB303 - 2-Pin Connector for EHM II System Pressure Sensor B303](#)
- Harness:** [W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- Specifications and Details:** See component check below:
- Function:** The sensor checks the EHM II system pressure and gives input to the EHM II control unit A310.

Component Check

(1) B303 - EHM II System Pressure Sensor

Action:

→NOTE:

Unplug the system pressure sensor from the wiring harness.

Use a [JT05791A](#) multimeter to measure for continuity between pins A and B on the sending unit:

When pressure-free, the sending unit is closed. It is forced to open while the engine is running.

Item	Measurement	Specification
B303 - EHM II System Pressure Sensor		
Sensor closed:	Pressure	below 220 kPa (2.2 bar; 32 psi)
Sensor open:	Pressure	over 220 kPa (2.2 bar; 32 psi)

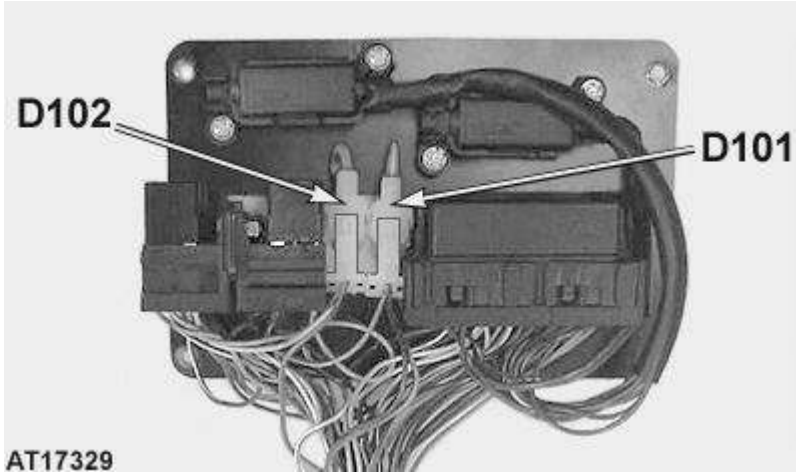
For extended checks, see also [SE26B - EHM II System Pressure Sensor, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES: Sending unit is in good condition.

NO: Replace the sending unit.

D101 - Differential Lock Diode



Diode

LEGEND:

- D101 Differential lock diode
- D102 Hi-Lo diode

Component Information

Component Information

- Type:** Diode
- Location:** On the fuse and relay box.
- Harness:** [W16 - Fuse and Relay Box II Wiring Harness](#)
- Specifications and Details:** See component check below:
- Function:** Part of differential lock control.

Component Check

(1) D101 - Differential Lock Diode

Action:

Use a [JT05791A](#) multimeter to measure for continuity between pins:

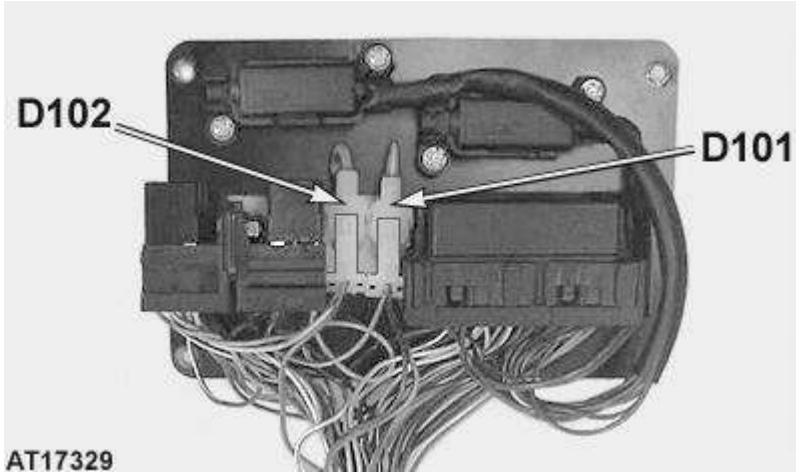
Item	Measurement	Specification
D101 - Differential Lock Diode		
1 (+) and 2 (—)	Continuity	
1 (—) and 2 (+)	No continuity	

Result:

YES:Diode is in good condition.

NO:Replace the diode.

D102 - Hi-Lo Diode



Diode

LEGEND:

- D101 Differential lock diode
- D102 Hi-Lo diode

Component Information

Component Information

- Type:** Diode
- Location:** On the fuse and relay box.
- Harness:** [W16 - Fuse and Relay Box II Wiring Harness](#)
- Specifications and Details:** See component check below:
- Function:** Part of Hi-Lo transmission control.

Component Check

(1) D102 - Hi-Lo Diode

Action:

Use a [JT05791A](#) multimeter to measure for continuity between pins:

Item	Measurement	Specification
-------------	--------------------	----------------------

D102 - Hi-Lo Diode

1 (+) and 2 (—)	Continuity
-----------------	------------

1 (—) and 2 (+)	No continuity
-----------------	---------------

Result:

YES:Diode is in good condition.

NO:Replace the diode.

E01 - H4 Headlight r.h.



H4 headlight

LEGEND:

- E01 H4 headlight r.h.
- E02 H4 headlight l.h.

Component Information

Component Information

Type:	H4 headlight
Location:	In the hood
Connector:	XE01 - 3/1-Pin Connectors for r.h. H4 Headlight E01
Harness:	W09 - Hood Wiring Harness
Specifications and Details:	55/60 W H4 bulb
Function:	Headlight

For extended checks, see also [SE06B - Headlights, Diagnostic Schematic and Circuit Test](#) in this Section.

E02 - H4 Headlight l.h.



H4 headlight

LEGEND:

- E01 H4 headlight r.h.
- E02 H4 headlight l.h.

Component Information

Component Information

Type:	H4 headlight
Location:	In the hood
Connector:	XE02 - 3/1-Pin Connectors for l.h. H4 Headlight E02
Harness:	W09 - Hood Wiring Harness
Specifications and Details:	55/60 W H4 bulb
Function:	Headlight

For extended checks, see also [SE06B - Headlights, Diagnostic Schematic and Circuit Test](#) in this Section.

E03/1 - Clearance Light I.h. (Tractors with Cab)



Clearance lights (tractors with cab)

Component Information

Component Information

Type:	Bayonet base lamp
Location:	L.h. side on the tractor
Connectors:	X32 - 3-Pin Connector for E03/1 and H34/1 Lights I.h. (Tractors with Cab)
Harness:	W02 - Main Wiring Harness
Specifications and Details:	12 V 4 W
Function:	Clearance light

For extended checks, see also [SE06A - Left Clearance Light, Right Tail Light and License Plate Light, Diagnostic Schematic and Circuit Test](#) in this Section.

E03/2 - Clearance Light L.h. (Tractors without Cab)



Clearance lights (tractors without cab)

Component Information

Component Information

Type:	Bayonet base lamp
Location:	L.h. side on the tractor
Connectors:	X24 - 4-Pin Connector for E03/2, E13, H32, H34/2 and H35 Lights L.h.
Harness:	W02 - Main Wiring Harness
Specifications and Details:	12 V 4 W
Function:	Clearance light

For extended checks, see also [SE06A - Left Clearance Light, Right Tail Light and License Plate Light, Diagnostic Schematic and Circuit Test](#) in this Section.

E04/1 - Clearance Light r.h. (Tractors with Cab)



Clearance lights (tractors with cab)

Component Information

Component Information

Type:	Bayonet base lamp
Location:	R.h. side on the tractor
Connector:	X33 - 3-Pin Connector for E04/1 and H44/1 Lights r.h. (Tractors with Cab)
Harness:	W02 - Main Wiring Harness
Specifications and Details:	12 V 4 W
Function:	Clearance light

For extended checks, see also [SE06A - Right Clearance Light, Left Tail Light and Instrument Panel Light, Diagnostic Schematic and Circuit Test](#) in this Section.

E04/2 - Clearance Light r.h. (Tractors without Cab)



Clearance lights (tractors without cab)

Component Information

Component Information

Type:	Bayonet base lamp
Location:	R.h. side on the tractor
Connector:	X25 - 4-Pin Connector for E04/2, E14, H33, H44/2 and H45 Lights r.h.
Harness:	W02 - Main Wiring Harness
Specifications and Details:	12 V 4 W
Function:	Clearance light

For extended checks, see also [SE06A - Right Clearance Light, Left Tail Light and Instrument Panel Light, Diagnostic Schematic and Circuit Test](#) in this Section.

E07 - H4 Farm Headlight L.h.



H4 farm headlights

Component Information

Component Information

Type:	H4 farm headlight
Location:	L.h. side on the tractor
Connector:	XE07 - 3-Pin Connector for L.h. H4 Farm Headlight E07
Harness:	W07 - H4 Farm Headlight Wiring Harness
Specifications and Details:	55/60 W H4 bulb
Function:	Farm headlight

E08 - H4 Farm Headlight r.h.



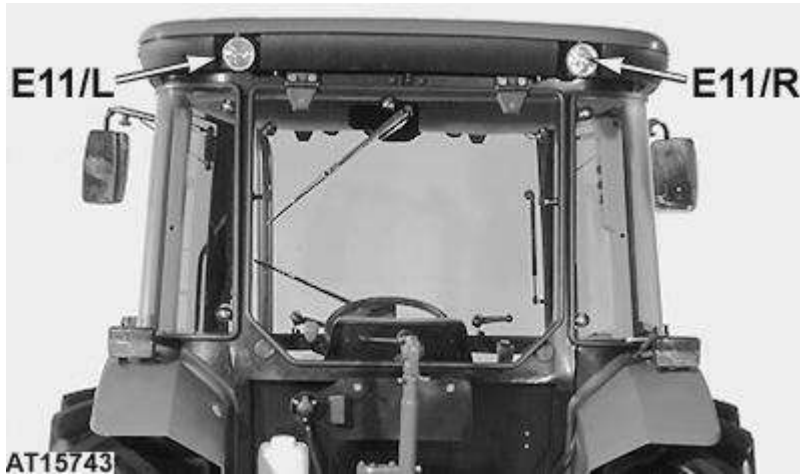
H4 farm headlights

Component Information

Component Information

Type:	H4 farm headlight
Location:	R.h. side on the tractor
Connector:	XE08 - 3-Pin Connector for r.h. H4 Farm Headlight E08
Harness:	W07 - H4 Farm Headlight Wiring Harness
Specifications and Details:	55/60 W H4 bulb
Function:	Farm headlight

E11/L - Rear Work Light I.h.



Rear work lights

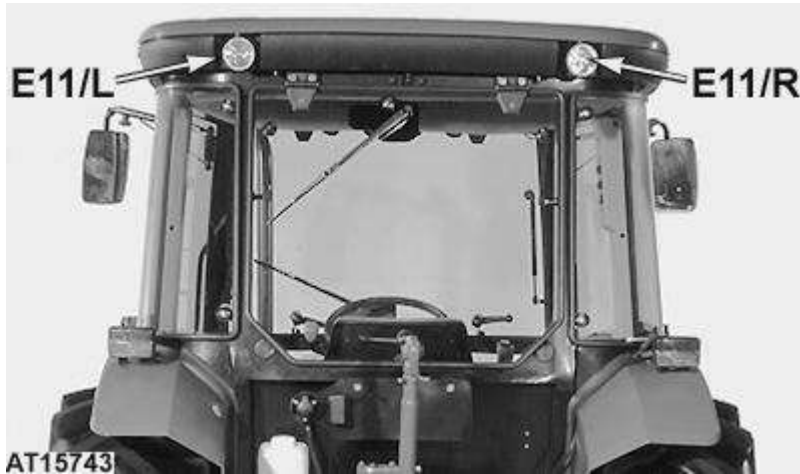
Component Information

Component Information

Type:	H1 socket bulb
Location:	In the roof rear side
Connector:	XE11/L - 2-Pin Connector for l.h. Rear Work Light E11/L
Harness:	W06 - Work Light Wiring Harness
Specifications and Details:	12 V 55 W
Function:	Rear work light

For extended checks, see also [SE07B - Rear Work Lights E11 \(Cab Only\), Diagnostic Schematic and Circuit Test](#) in this Section.

E11/R - Rear Work Light r.h.



Rear work lights

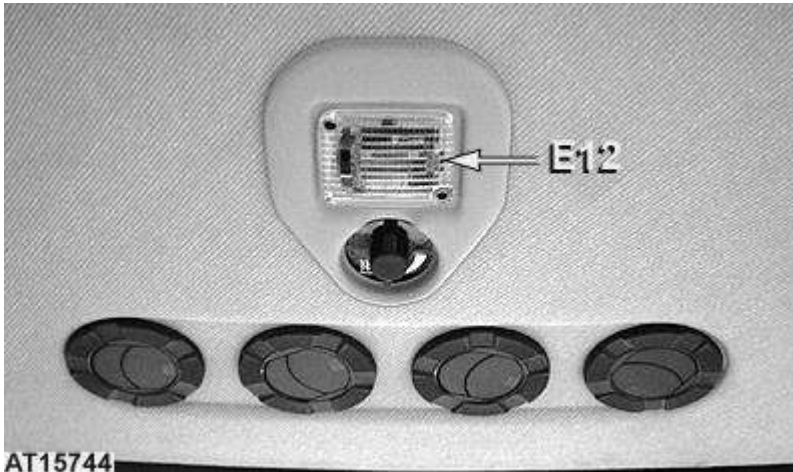
Component Information

Component Information

Type:	H1 socket bulb
Location:	In the roof rear side
Connector:	XE11/R - 2-Pin Connector for r.h. Rear Work Light E11/R
Harness:	W06 - Work Light Wiring Harness
Specifications and Details:	12 V 55 W
Function:	Rear work light

For extended checks, see also [SE07B - Rear Work Lights E11 \(Cab Only\), Diagnostic Schematic and Circuit Test](#) in this Section.

E12 - Dome Light



Dome light

LEGEND:

E12 Dome light

Component Information

Component Information

Type:	Tubular lamp
Location:	Inside the roof
Connector:	XE12 - 2/1-Pin Connectors for Dome Light E12
Harness:	W05 - Cab Wiring Harness
Specifications and Details:	12 V 10 W
Function:	Dome light

For extended checks, see also [SE09B - Dome Light E12, Diagnostic Schematic and Circuit Test](#) in this Section.

E13 - Tail Light l.h.



Tail lights (ROPS version)



Tail lights (cab version)

LEGEND:

- E13 Tail light l.h.
- E14 Tail light r.h.

Component Information

Component Information

Type:	Bayonet base lamp
Location:	Rear l.h. side of the tractor
Connector:	X24 - 4-Pin Connector for E03/2, E13, H32, H34/2 and H35 Lights l.h.
Harness:	W02 - Main Wiring Harness
Specifications and Details:	12 V 10 W
Function:	Tail light

For extended checks, see also [SE06A - Right Clearance Light, Left Tail Light and Instrument](#)

[Panel Light, Diagnostic Schematic and Circuit Test](#) in this Section.

E14 - Tail Light r.h.



Tail lights (ROPS version)



Tail lights (cab version)

LEGEND:

- E13 Tail light l.h.
- E14 Tail light r.h.

Component Information

Component Information

Type:	Bayonet base lamp
Location:	Rear r.h. side of the tractor
Connector:	X25 - 4-Pin Connector for E04/2, E14, H33, H44/2 and H45 Lights r.h.
Harness:	W02 - Main Wiring Harness
Specifications and Details:	12 V 10 W
Function:	Tail light

For extended checks, see also [SE06A - Left Clearance Light, Right Tail Light and License Plate](#)

[Light, Diagnostic Schematic and Circuit Test](#) in this Section.

E18/1L - Front Work Light I.h. (inner)



Front work light

LEGEND:

- E18/1L Front work light I.h. (inner)
- E18/1R Front work light r.h. (inner)

Component Information

Component Information

Type:	H1 socket bulb
Location:	Roof front side
Connector:	XE18/1L - 2-Pin Connector for I.h. Front Work Light E18/1L (Inner)
Harness:	W06 - Work Light Wiring Harness
Specifications and Details:	12 V 55 W
Function:	Front work light

For extended checks, see also [SE07B - Front Work Lights E18 \(Cab Only\), Diagnostic Schematic and Circuit Test](#) in this Section.

E18/1R - Front Work Light r.h. (inner)



Front work light

LEGEND:

- E18/1L Front work light l.h. (inner)
- E18/1R Front work light r.h. (inner)

Component Information

Component Information

Type:	H1 socket bulb
Location:	Roof front side
Connector:	XE18/1R - 2-Pin Connector for r.h. Front Work Light E18/1R (Inner)
Harness:	W06 - Work Light Wiring Harness
Specifications and Details:	12 V 55 W
Function:	Front work light

For extended checks, see also [SE07B - Front Work Lights E18 \(Cab Only\), Diagnostic Schematic and Circuit Test](#) in this Section.

E18/2L - Front Work Light l.h. (outer)



Front work light

LEGEND:

- E18/2L Front work light l.h. (outer)
- E18/2R Front work light r.h. (outer)

Component Information

Component Information

Type:	H1 socket bulb
Location:	Roof front side
Connector:	XE18/2L - 2-Pin Connector for l.h. Front Work Light E18/2L (Outer)
Harness:	W06 - Work Light Wiring Harness
Specifications and Details:	12 V 55 W
Function:	Front work light

For extended checks, see also [SE07B - Front Work Lights E18 \(Cab Only\), Diagnostic Schematic and Circuit Test](#) in this Section.

E18/2R - Front Work Light r.h. (outer)



Front work light

LEGEND:

- E18/2L Front work light l.h. (outer)
- E18/2R Front work light r.h. (outer)

Component Information

Component Information

Type:	H1 socket bulb
Location:	Roof front side
Connector:	XE18/2R - 2-Pin Connector for r.h. Front Work Light E18/2R (Outer)
Harness:	W06 - Work Light Wiring Harness
Specifications and Details:	12 V 55 W
Function:	Front work light

For extended checks, see also [SE07B - Front Work Lights E18 \(Cab Only\), Diagnostic Schematic and Circuit Test](#) in this Section.

E21 - License Plate Light



License plate light

LEGEND:

E21 License plate light

Component Information

Component Information

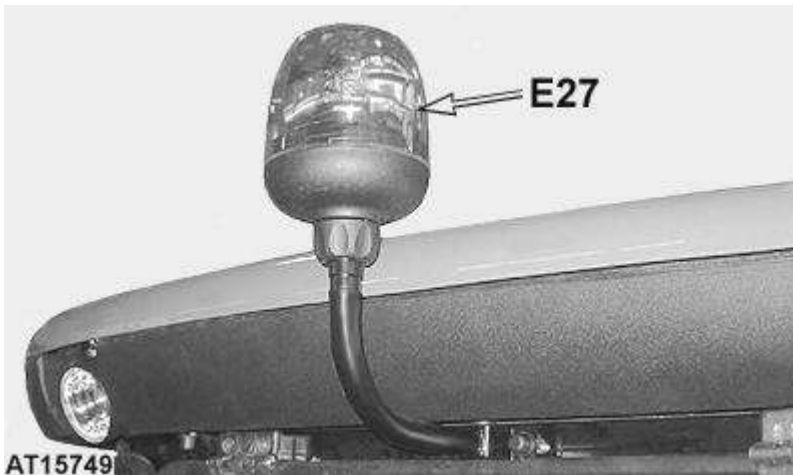
Type:	Tubular lamp
Location:	Rear side of the tractor
Connector:	XE21 - 2-Pin Connector for License Plate Light E21
Harness:	W02 - Main Wiring Harness
Specifications and Details:	12 V 10 W
Function:	License plate

For extended checks, see also [SE06A - Left Clearance Light, Right Tail Light and License Plate Light, Diagnostic Schematic and Circuit Test](#) in this Section.

E27 - Beacon Light



Beacon light (ROPS version)



Beacon light (cab version)

LEGEND:

E27 Beacon light

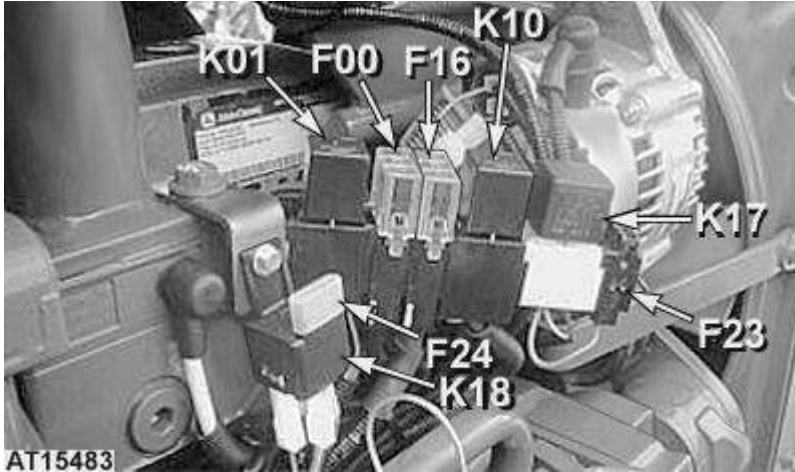
Component Information

Component Information

Type:	H1 bulb
Location:	Rear side of the roof or on the ROPS
Connector:	XE27 - 2/1-Pin Connectors for Beacon Light E27
Harness:	W08 - Beacon Light Wiring Harness
Specifications and Details:	12 V 55 W
Function:	Beacon light

For extended checks, see also [SE13 - Beacon Light E27, Diagnostic Schematic and Circuit Test](#) in this Section.

F00 - Main Fuse for Main Wiring Circuit



Fuses and relays

LEGEND:

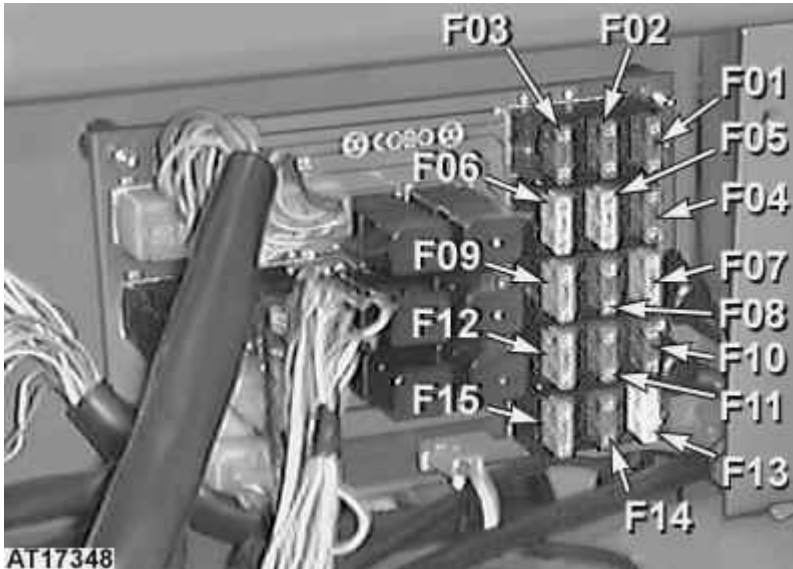
- F00 50 amp main fuse for main wiring circuit
- F16 50 amp main fuse for cab wiring circuit
- F23 7.5 amp fuse for shut-off system circuit (EHM)
- F24 20 amp fuse for electronic hitch sensing circuit (EHS II)
- F24 II 20 amp fuse for electronic hitch sensing circuit (EHS II)
- K01 Starter relay
- K10 Intake air heater relay
- K17 Relay of shut-off system (EHM)
- K18 Relay of electronic hitch sensing (EHS)
- K18 II Relay of electronic hitch sensing (EHS II)

Component Information

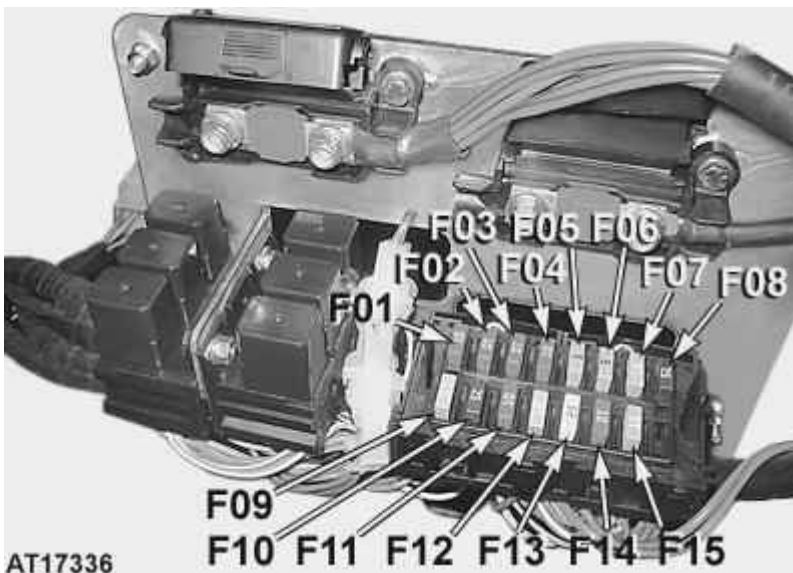
Component Information

- Type:** Fuse
- Location:** R.h. side of the engine near the alternator
- Connector:** [XF00 - 2-Pin Connector for Main Fuse F00](#)
- Harness:** [W01 - Engine Wiring Harness](#)
- Specifications and Details:** 50 amp
- Function:** Protects the main wiring circuit.

F01 to F15 - Fuse Box



Fuse box (Version I)



Fuse box (Version II)

LEGEND:

- F01 10 amp fuse; PTO neutral start switch, transmission speed sensor
- F02 10 amp fuse; 3-terminal socket +15, air suspension seat, rear work light with switch
- F03 10 amp fuse; Alternator, charging indicator light, fuel shut-off solenoid valve, fuel pump, cab +15
- F04 10 amp fuse; Horn
- F05 5 amp fuse; 7-terminal socket, clearance light l.h., tail light r.h., licence plate light
- F06 5 amp fuse; 7-terminal socket, clearance light r.h., tail light l.h., instrument panel light
- F07 15 amp fuse; Turning lights via warning light switch +15
- F08 7.5 amp fuse; Relay K05, Hi-Lo switch, reversal switch for allocation (flow divider solenoid valve)

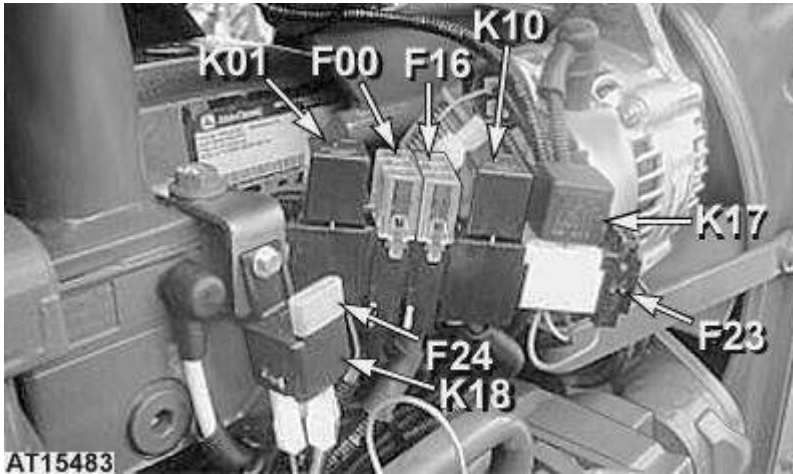
- F09 15 amp fuse; Trailer brake relay, brake pedal switch
- F10 7,5 amp fuse; Relay K04, differential lock switch, front-wheel drive switch
- F11 10 amp fuse; Low beam lights
- F12 15 amp fuse; 24/12-speed transmission circuit
- F13 25 amp fuse; 3-terminal socket +30
- F14 10 amp fuse; Beacon light, clock, warning light switch +30
- F15 15 amp fuse; High beam indicator and high beam lights

Component Information

Component Information

Type:	Fuse
Location:	In the fuse box
Connector:	Fuses are plugged into the fuse box
Harness:	W02 - Main Wiring Harness
Specifications and Details:	See legend
Function:	Protects different electrical circuits.

F16 - Main Fuse for Cab Wiring Circuit



Fuses and relays

LEGEND:

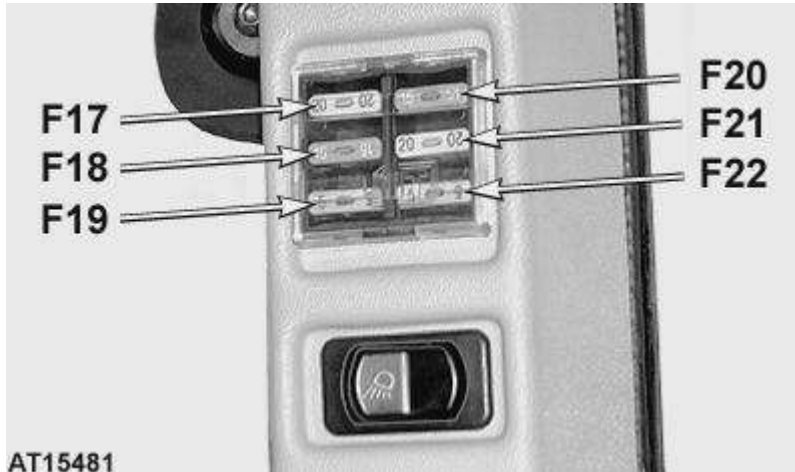
F00	50 amp main fuse for main wiring circuit
F16	50 amp main fuse for cab wiring circuit
F23	7.5 amp fuse for shut-off system circuit (EHM)
F24	20 amp fuse for electronic hitch sensing circuit (EHS II)
F24 II	20 amp fuse for electronic hitch sensing circuit (EHS II)
K01	Starter relay
K10	Intake air heater relay
K17	Relay of shut-off system (EHM)
K18	Relay of electronic hitch sensing (EHS)
K18 II	Relay of electronic hitch sensing (EHS II)

Component Information

Component Information

Type:	Fuse
Location:	R.h. side of the engine near the alternator.
Connector:	XF16 - 2-Pin Connector for Main Fuse F16
Harness:	W04 - Engine/Cab Wiring Harness
Specifications and Details:	50 amp
Function:	Protects the cab wiring circuit.

F17 to F22 - Cab Fuses



Location, size and function of cab fuses

LEGEND:

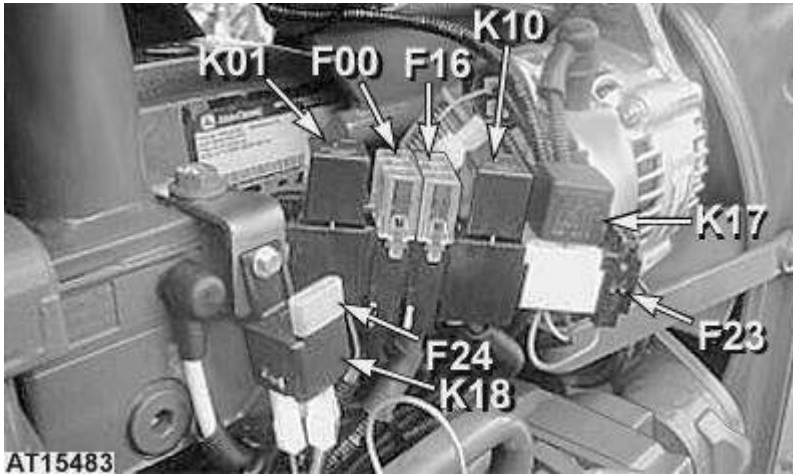
- F17 20 amp fuse; 3-speed switch (fan/air-conditioning)
- F18 15 amp fuse; front and rear wiper and windshield washer system
- F19 5 amp fuse; front work light indicator and radio +15
- F20 15 amp fuse; rear work lights
- F21 20 amp fuse; front work lights
- F22 5 amp fuse; dome light and radio +30

Component Information

Component Information

- Type:** Fuse
- Location:** Cab fuse box is located in the post on the r.h. side
- Connector:** [XF17 to XF22 - Connectors for Cab Fuses \(F17 to F22\)](#)
- Harness:** [W05 - Cab Wiring Harness](#)
- Specifications and Details:** See legend.
- Function:** Protects different electrical circuits.

F23 - Fuse of Shut-Off System Circuit (EHM)



Fuses and relays

LEGEND:

F00	50 amp main fuse for main wiring circuit
F16	50 amp main fuse for cab wiring circuit
F23	7.5 amp fuse for shut-off system circuit (EHM)
F24	20 amp fuse for electronic hitch sensing circuit (EHS II)
F24 II	20 amp fuse for electronic hitch sensing circuit (EHS II)
K01	Starter relay
K10	Intake air heater relay
K17	Relay of shut-off system (EHM)
K18	Relay of electronic hitch sensing (EHS)
K18 II	Relay of electronic hitch sensing (EHS II)

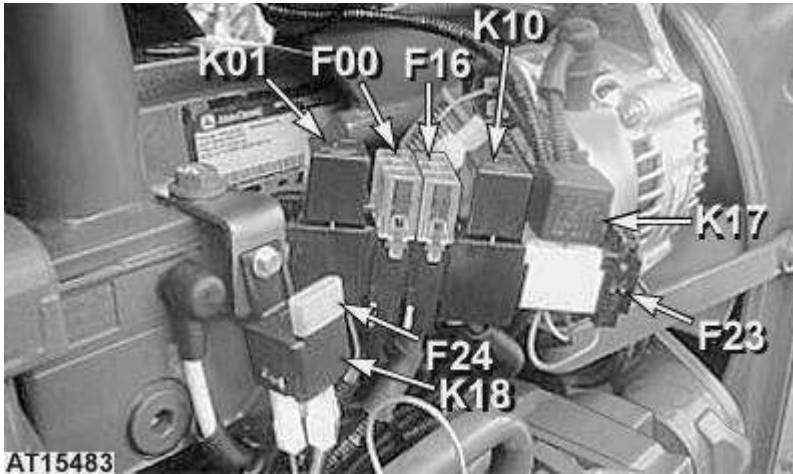
Component Information

Component Information

Type:	Fuse
Location:	R.h. side of the engine near the alternator.
Connector:	XF23 - 2-Pin Connector for Fuse F23 of Shut-Off System Circuit (EHM)
Harness:	W12 - Shut-Off System Wiring Harness (EHM)
Specifications and Details:	7.5 amp
Function:	Protects the shut-off system circuit (EHM).

For extended checks, see also [SE26A - Shut-Off System \(EHM\), Functional Schematic and Theory of Operation](#) in this Section.

F24 - Fuse for Electronic Hitch Sensing Circuit (EHS)



Fuses and relays

LEGEND:

- F00 50 amp main fuse for main wiring circuit
- F16 50 amp main fuse for cab wiring circuit
- F23 7.5 amp fuse for shut-off system circuit (EHM)
- F24 20 amp fuse for electronic hitch sensing circuit (EHS II)
- F24 II 20 amp fuse for electronic hitch sensing circuit (EHS II)
- K01 Starter relay
- K10 Intake air heater relay
- K17 Relay of shut-off system (EHM)
- K18 Relay of electronic hitch sensing (EHS)
- K18 II Relay of electronic hitch sensing (EHS II)

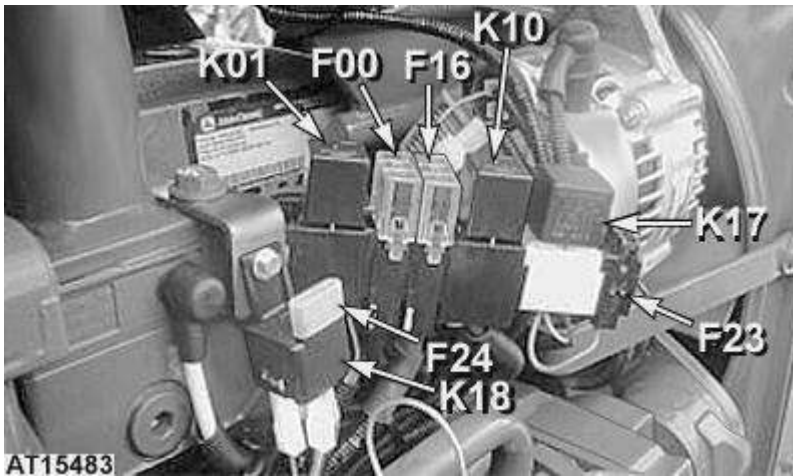
Component Information

Component Information

- Type:** Main fuse
- Location:** R.h. side of the engine near the alternator and plugged into the K18 relay.
- Connector:** Plugged in the K18 relay
- Harness:** [W11 - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- Specifications and Details:** 20 amp
- Function:** Protects the electronic hitch sensing circuit (EHS).

For extended checks, see also [SE15A - Power Supply of EHS System, Diagnostic Schematic and Circuit Test](#) or [SE15A - Electronic Hitch Sensing \(EHS\) \(Summary of References\)](#) in this Section.

F24 II - Fuse for Electronic Hitch Sensing Circuit (EHS II)



Fuses and relays

LEGEND:

- F00 50 amp main fuse for main wiring circuit
- F16 50 amp main fuse for cab wiring circuit
- F23 7.5 amp fuse for shut-off system circuit (EHM)
- F24 20 amp fuse for electronic hitch sensing circuit (EHS II)
- F24 II 20 amp fuse for electronic hitch sensing circuit (EHS II)
- K01 Starter relay
- K10 Intake air heater relay
- K17 Relay of shut-off system (EHM)
- K18 Relay of electronic hitch sensing (EHS)
- K18 II Relay of electronic hitch sensing (EHS II)

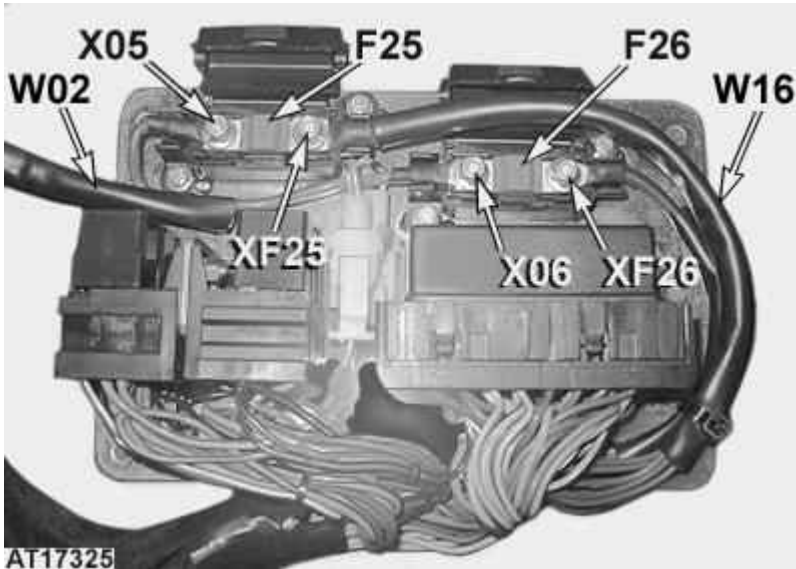
Component Information

Component Information

- Type:** Main fuse
- Location:** R.h. side of the engine near the alternator and plugged into the K18 II relay.
- Connector:** Plugged in the K18 II relay
- Harness:** [W11 II - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)
- Specifications and Details:** 20 amp
- Function:** Protects the electronic hitch sensing circuit (EHS II).

For extended checks, see also [SE15B - Power Supply of EHS II System, Diagnostic Schematic and Circuit Test](#) or [SE15B - Electronic Hitch Sensing \(EHS II\) \(Summary of References\)](#) in this Section.

F25 - Main Fuse of Fuse and Relay Box II (+15)



Main fuses of fuse and relay box II

LEGEND:

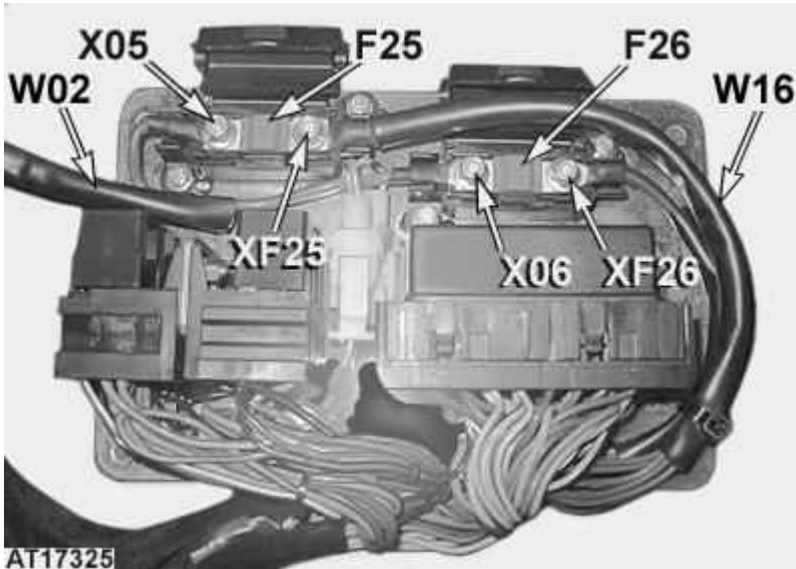
- F25 50 amp main fuses of fuse and relay box II (+15)
- F26 50 amp main fuses of fuse and relay box II (+30)
- X05 1-pin connector for fuse box (+15)
- X06 1-pin connector for fuse box (+30)
- XF25 1-pin connector for main fuse F25 of fuse and relay box II (+15)
- XF26 1-pin connector for main fuse F26 of fuse and relay box II (+30)
- W02 Main wiring harness
- W16 Fuse and relay box II wiring harness

Component Information

Component Information

- Type:** Fuse
- Location:** On the fuse and relay box.
- Connector:** [XF25 - 1-Pin Connector for Main Fuse F25 of Fuse and Relay Box II \(+15\)](#)
- Harness:** [W16 - Fuse and Relay Box II Wiring Harness](#)
- Specifications and Details:** 50 amp
- Function:** Protects the wiring of fuse and relay box.

F26 - Main Fuse of Fuse and Relay Box II (+30)



Main fuses of fuse and relay box II

LEGEND:

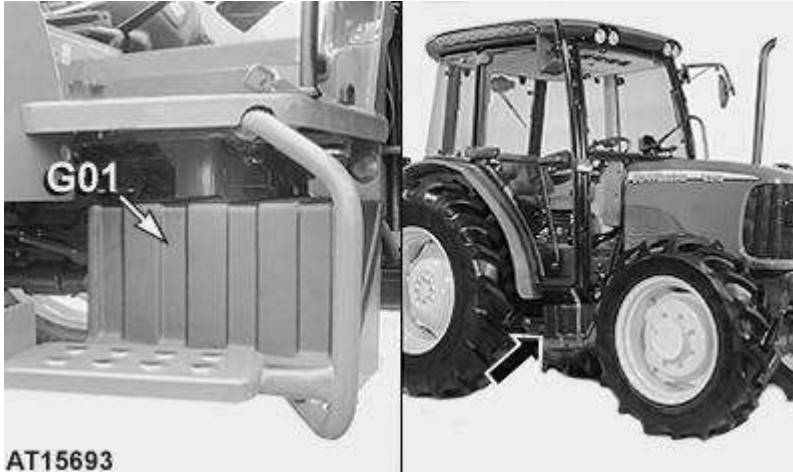
- F25 50 amp main fuses of fuse and relay box II (+15)
- F26 50 amp main fuses of fuse and relay box II (+30)
- X05 1-pin connector for fuse box (+15)
- X06 1-pin connector for fuse box (+30)
- XF25 1-pin connector for main fuse F25 of fuse and relay box II (+15)
- XF26 1-pin connector for main fuse F26 of fuse and relay box II (+30)
- W02 Main wiring harness
- W16 Fuse and relay box II wiring harness

Component Information

Component Information

- Type:** Fuse
- Location:** On the fuse and relay box
- Connector:** [XF26 - 1-Pin Connector for Main Fuse F26 of Fuse and Relay Box II \(+30\)](#)
- Harness:** [W16 - Fuse and Relay Box II Wiring Harness](#)
- Specifications and Details:** 50 amp
- Function:** Protects the wiring of fuse and relay box.

G01 - Battery



G01 - battery

Component Information

Component Information

Type:	Battery
Location:	Under r.h. step
Specifications and Details:	12 V 100 Ah 640 amp
Function:	Energy accumulator for the power supply system

Battery Voltage and Specific Gravity Test

(1) Battery Inspection

Action:

⚠ CAUTION:

Review safety precautions before testing or charging the battery.

Check battery for:

- cracked case
- corroded terminals
- loose terminals or battery posts
- dirt
- moisture

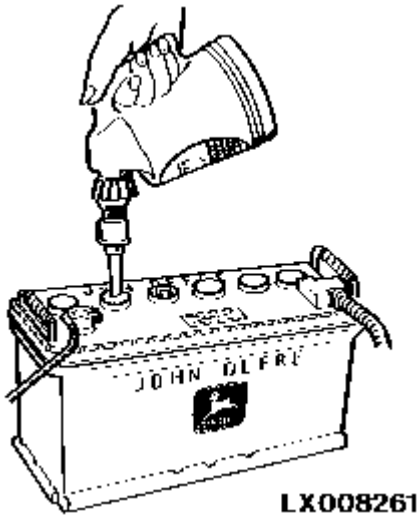
Result:

YES: [GO TO 2.](#)

NO: Correct all abnormal conditions, then [GO TO 2.](#)

(2) Check Electrolyte Level of All Cells

Action:



Check Electrolyte Level of All Cells

→NOTE:

Open all cell plugs.

→NOTE:

Add battery water to correct level just before releasing battery. Do NOT overfill battery.

If level is below top of plates, add battery water to approximately 6 mm (1/4 in.) above plates.

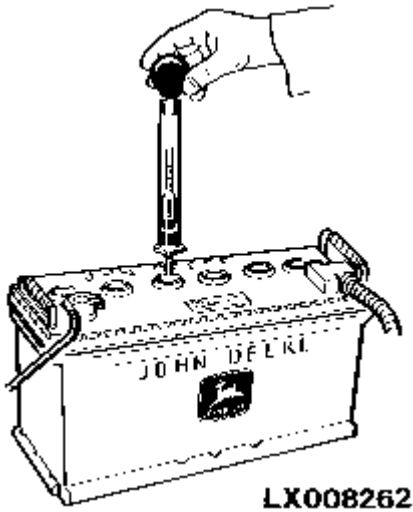
Result:

YES:Electrolyte level above plates: [GO TO 3.](#)

NO:Electrolyte level below plates: fill up the cell with battery water and charge the battery for 20 minutes at 10 amp. After that [GO TO 3.](#)

(3) Check Specific Gravity of Each Cell

Action:



Check Specific Gravity of Each Cell

Check and record specific gravity of each cell with a hydrometer.

→NOTE:

If any cell is at or above 1.175 points, see result column.

Result:

YES:All cells 1.225 or above and less than 0.050 points variation between cells, GO TO [Battery Load Test](#).

NO:ANY cell below 1.225 and less than 0.050 points variation between cells, [GO TO 4](#).

NO:When variation is more than 0.050 points between cells, GO TO ["Remove and Install Battery"](#).

(4) Check Battery Voltage

Action:

Surface charge must be removed before checking voltage of the battery.

To remove surface charge, wait five minutes before checking the voltage.

Result:

YES: If battery is 11.8 volts or more, GO TO [Battery Load Test](#).

NO: If battery is less than 11.8 volts, GO TO [Charge Battery](#).

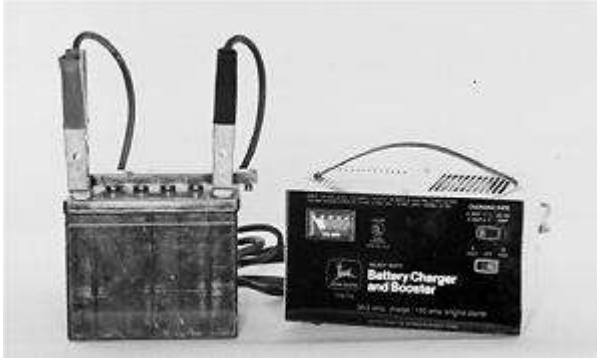
Charge Battery

→NOTE:

Before charging the battery, the [Battery Voltage and Specific Gravity Test](#) must be performed.

(1) Connect Variable Rate Charger

Action:



Battery charger

→NOTE:

Before connecting the charger, open ALL cell plugs.

→NOTE:

Look for the polarity of the battery terminals.

Red cable to battery positive post.

Black cable to battery negative post.

Connect variable rate charger to battery.

Result:

YES: [GO TO 2.](#)

(2) Start Charge

Action:

Start charger at slow rate. Increase charge rate one setting at a time. Check charger ampmeter after one minute at each setting. Maintain 10-amp charge rate.

Check if battery is accepting a 10-amp charge after 10 minutes.

Result:

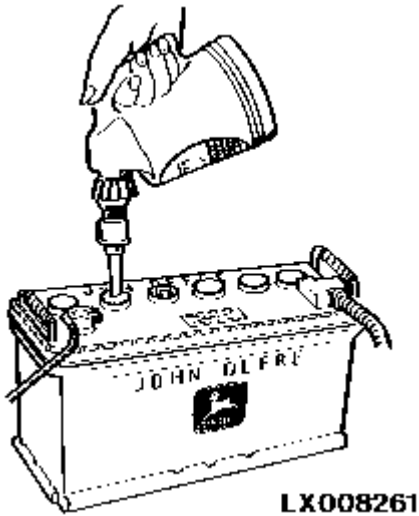
YES:But battery needs water or all cells were below 1.225. [GO TO 3.](#)

YES:Battery did not need water. [GO TO 4.](#)

NO:Replace battery (see [Remove and Install Battery](#).)

(3) Fill Up the Electrolyte Level of ALL Cells

Action:



Water fill

→NOTE:

Add battery water to correct level just before releasing battery. Do NOT over-fill battery.

Set charger at 15-25 amp.

IMPORTANT:

Decrease charge rate if battery produces too much gas or too many bubbles, or if the battery becomes too warm to touch.

Check specific gravity after 30 minutes (60 minutes for maintenance-free battery).

Result:

YES: If variation between cells is less than 0.050, [GO TO 4.](#)

NO: If variation between cells is more than 0.050, replace battery (see [Remove and Install Battery](#)).

(4) End Charge

Action:

Continue charging battery until specific gravity is 1.225 - 1.265.

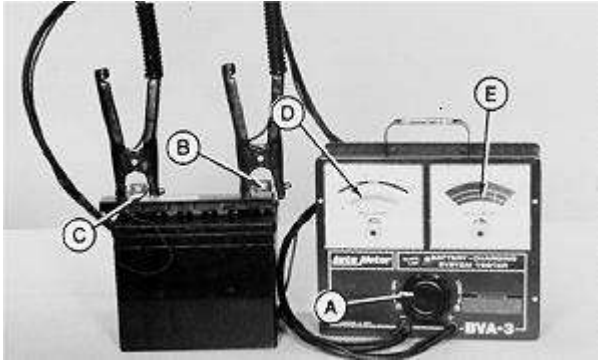
Result:

YES: GO TO [Battery Load Test](#)

Battery Load Test

(1) Connection from the Load Tester

Action:



Load tester

LEGEND:

- A Tester load knob
- B Tester red cable
- C Tester black cable
- D Amperage
- E Voltage

→NOTE:

Make sure battery passed voltage and specific gravity tests before testing (see Battery Voltage and Specific Gravity Test).

1. Turn load knob (A) of tester (JT05685 Load Tester) counterclockwise to OFF.
2. Connect tester red cable (B) to battery positive post.
3. Connect tester black cable (C) to battery negative post.

Result:

YES: GO TO 2.

(2) Test Procedure

Action:

1. Turn load knob of tester clockwise until amperage reading (D) is equal to:
 - Cold cranking amperage rating (blue scale).
 - Three times ampere hour rating (black scale)
2. Hold for 15 seconds, note voltage reading, and turn load knob of tester to Off

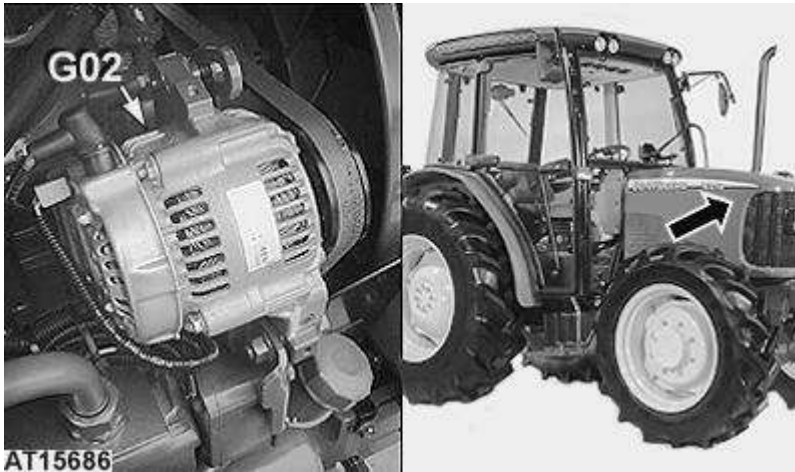
Item	Measurement	Specification
Minimum battery voltage at 20°C (70°F)		
Under load:	Volts	9.6 V

Result:

YES:If the battery passes the test, battery is good.

NO:If the battery does not pass the test, replace battery (see [Remove and Install Battery](#)).

G02 - Alternator



AT15686

3-cyl. tractor



AT15687

4-cyl. tractor

Component Information

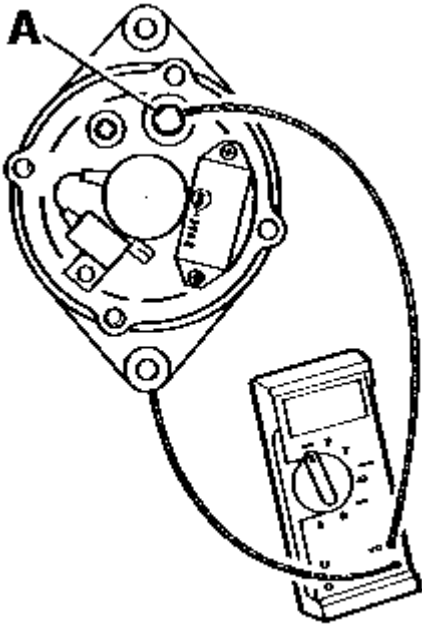
Component Information

Type:	Alternator
Location:	R.h. side on the engine
Connectors	XG02 - Connectors for Alternator G02
Harness:	W01 - Engine Wiring Harness
Specifications and Details:	12 V 40 amp (without cab) 60 amp (with cab)
Function:	Supplies power to the electrical system

Component Check

(1) Check Alternator Output Voltage

Action:



LX008263

Alternator output pin B+

With engine speed above 1500 rpm, the alternator indicator light should be OFF.

Connect red lead of digital multimeter to alternator output pin B+ (A) and black ground lead. Alternator output voltage with the listed surface temperature should be:

On 40 and 60 amp alternators:

- 14.7-15.2 volts at -20°C (-4°F)
- 14.4-14.7 volts at 25°C (77°F)
- 14.0-14.5 volts at 50°C (122°F)

Result:

YES: Warning devices OFF and voltage OK, [GO TO 3](#)

NO: Warning devices ON or OFF and volts above spec, [GO TO 2](#)

NO: Warning devices ON or OFF and volts below spec, [GO TO 3](#)

(2) Alternator Overcharging

Action:

Operator reports frequent addition of water to battery or battery boil dry.

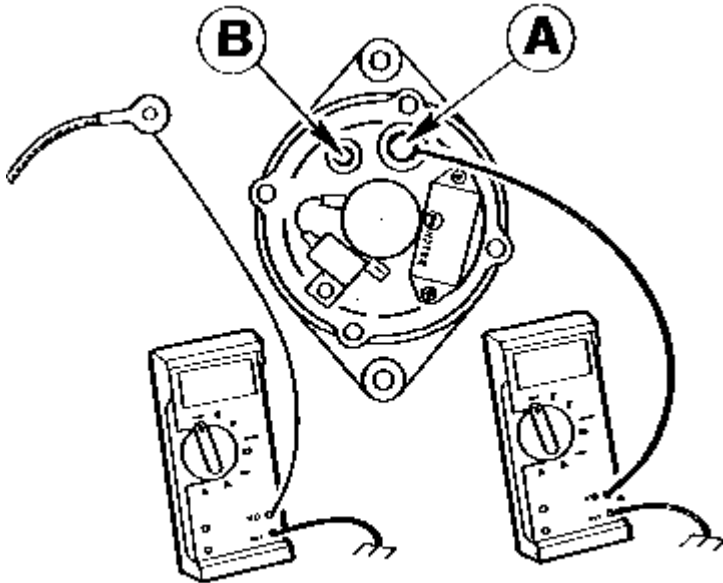
- a. Replace voltage regulator.
- b. Recheck alternator output voltage with new regulator, [see Step 5](#) .

Result:

YES: [GO TO 1](#)

(3) Battery-Alternator Circuit Check

Action:



LX008264

Alternator output pins B+ and D+

Engine must be OFF. Using a digital multimeter, check voltage at battery, alternator output pin B+ (A), and pin D+ (B).

→NOTE:

For checking lead D+ the main switch must be in position RUN.

Voltage at alternator pins should be 0.2 volts maximum below battery voltage.

→NOTE:

If battery voltage is below 12.3 volts, charge battery.

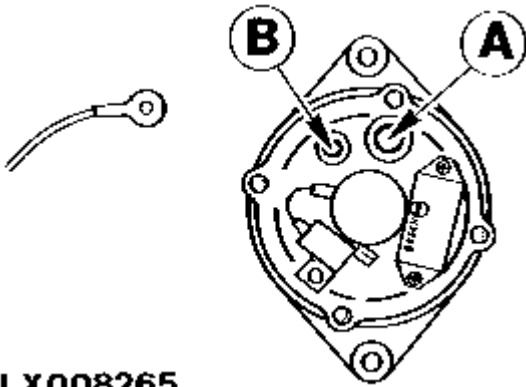
Result:

YES: [GO TO 4](#)

NO: Repair battery circuit, then [GO TO 4](#)

(4) Exciter Circuit Check

Action:



LX008265

B+ and D+ terminal leads

Reconnect lead D+ to alternator.

With main switch ON connect digital multimeter to D+ (B), black lead to ground.

Voltage should be zero with main switch OFF. However, if the main switch is in RUN position, voltage must be 1 to 2 volts. With engine running, voltage must be at least 13.5 volts.

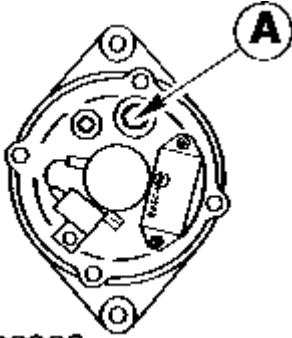
Result:

YES: [GO TO 5](#)

NO: Repair circuit of main switch, then [GO TO 5](#)

(5) Alternator Output Voltage Check

Action:



LX008266

Alternator output pin B+

Connect digital multimeter to alternator output pin B+ (A).

Run engine above 1500 rpm.

Output voltage should increase 1-2 volts above battery voltage.

→NOTE:

Voltage increase will be greater if battery voltage is below 12.3 volts.

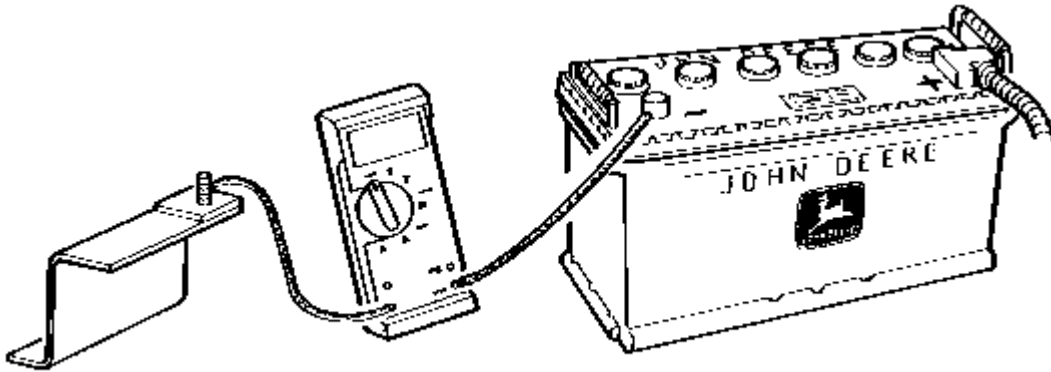
Result:

YES: [GO TO 9](#)

NO: [GO TO 6](#)

(6) Check for Electrical Leakage

Action:



LX008268

Electrical leakage

IMPORTANT:

All consumers must be switched off, all switches must be in the OFF position, the cab door must be closed and the engine must be shut off.

Disconnect the battery ground cable (-). All other ground leads must remain connected. Connect the digital multimeter to the tractor's frame and to the negative terminal (-) of the battery.

First select the maximum measuring range (10 amps). Select a lower measuring range if current draw is within a lower measuring range.

Electrical leakage should be less than 100 mA.

Result:

YES: [GO TO 8](#)

NO: [GO TO 7](#)

(7) Check for Electrical Leakage from System

Action:

Disconnect the battery ground cable (-). All other ground leads must remain connected. Connect the digital multimeter to the tractor's frame and to the negative terminal (-) of the battery.

Disconnect the components one at a time until leakage is less than 100 mA.

Reconnect each lead after check, and put the fuses and relays back in place.

Sequence for checking components

Sequence for checking components:

Alternator pin D+

Alternator pin B+

Starter solenoid

Starter relay

One at a time, pull each fuse out of the fuse boxes.

One at a time, pull each relay out of the relay boxes.

Check the circuit in which the leakage has been detected. Disconnect the leads to the components in this circuit. If the leak still exists, the problem is a grounded or shorted circuit. If the leak does not exist, the problem is at one of the components.

Result:

YES: [GO TO 9](#)

NO: [GO TO 8](#)

(8) Causes for Low Alternator Output

Action:

Loose alternator belt or pulley. Inspect parts for wear and correct torque.

Loose hardware or connections.

Worn brushes or faulty rotor field circuit (see Step 11).

Rectifier diodes shorted or open (see step 12).

Stator winding shorted (see step 13).

Voltage regulator defective.

Result:

NO: Repair alternator, then [GO TO 3](#)

(9) Alternator Check Results

Action:

If alternator checks out to be normal at this step and a problem has been corrected, the alternator is NORMAL.

If alternator checks out to be normal at this step without isolating a problem, but operator reports alternator warning activated, problem may be intermittent or warning levels incorrect. Recheck alternator output capacity.

For extended checks, see also [SE01D - Charging System, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES: End of test.

(1) H01 - Horn

Action:

→NOTE:

Unplug the horn from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B of the horn:

Item	Measurement	Specification
H01 - Horn		
Horn coil:	Resistance	below 1 ohm
Current draw:	Current	approx. 3.1 amps

For extended checks, see also [SE03 - Horn H01, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

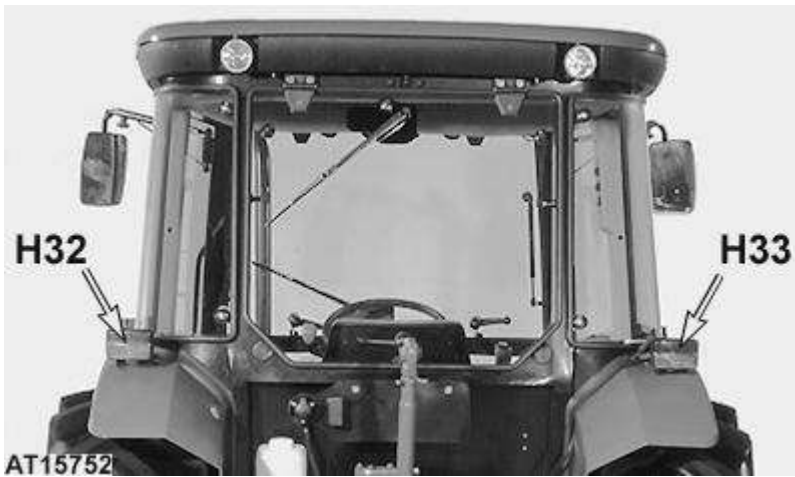
YES:Horn is OK.

NO:Replace horn.

H32 - Stop Light l.h.



Stop lights (ROPS version)



Stop lights (cab version)

LEGEND:

- H32 Stop light l.h.
- H33 Stop light r.h.

Component Information

Component Information

Type:	Bayonet base lamp
Location:	Rear l.h. side of the tractor
Connector:	X24 - 4-Pin Connector for E03/2, E13, H32, H34/2 and H35 Lights l.h.
Harness:	W02 - Main Wiring Harness
Specifications and Details:	12 V 21 W
Function:	Stop light

For extended checks, see also [SE16C - Stop Lights, Front-Wheel Drive Circuit and Parking](#)

[Brake Circuit, Diagnostic Schematic and Circuit Test](#) in this Section.

H33 - Stop Light r.h.



Stop lights (ROPS version)



Stop lights (cab version)

LEGEND:

- H32 Stop light l.h.
- H33 Stop light r.h.

Component Information

Component Information

Type:	Bayonet base lamp
Location:	Rear r.h. side of the tractor
Connector:	X25 - 4-Pin Connector for E04/2, E14, H33, H44/2 and H45 Lights r.h.
Harness:	W02 - Main Wiring Harness
Specifications and Details:	12 V 21 W
Function:	Stop light

For extended checks, see also [SE16C - Stop Lights, Front-Wheel Drive Circuit and Parking](#)

[Brake Circuit, Diagnostic Schematic and Circuit Test](#) in this Section.

H34/1 - Turn Signal Light l.h. (Tractors with Cab)



Turn signal lights

Component Information

Component Information

Type:	Bayonet base lamp
Location:	L.h. side on the cab
Connector:	X32 - 3-Pin Connector for E03/1 and H34/1 Lights l.h. (Tractors with Cab)
Harness:	W02 - Main Wiring Harness
Specifications and Details:	12 V 21 W
Function:	Turn signal light

For extended checks, see also [SE16A - Turn Signal Lights, Diagnostic Schematic and Circuit Test](#) in this Section.

H34/2 - Turn Signal Light l.h. (Front Side) (Tractors without Cab)



Turn signal lights

Component Information

Component Information

Type:	Bayonet base lamp
Location:	L.h. side on the rear fender
Connector:	X24 - 4-Pin Connector for E03/2, E13, H32, H34/2 and H35 Lights l.h.
Harness:	W02 - Main Wiring Harness
Specifications and Details:	12 V 21 W
Function:	Turn signal light

For extended checks, see also [SE16A - Turn Signal Lights, Diagnostic Schematic and Circuit Test](#) in this Section.

H35 - Turn Signal Light l.h. (Rear side)



Turn signal lights (ROPS version)



Turn signal lights (cab version)

LEGEND:

- H35 Turn signal light l.h.
- H45 Turn signal light r.h.

Component Information

Component Information

Type:	Bayonet base lamp
Location:	L.h. side on the rear fender
Connector:	X24 - 4-Pin Connector for E03/2, E13, H32, H34/2 and H35 Lights l.h.
Harness:	W02 - Main Wiring Harness
Specifications and Details:	12 V 21 W
Function:	Turn signal light

For extended checks, see also [SE16A - Turn Signal Lights, Diagnostic Schematic and Circuit](#)

[Test](#) in this Section.

H44/1 - Turn Signal Light r.h. (Tractors with Cab)



Turn signal lights

Component Information

Component Information

Type:	Bayonet base lamp
Location:	R.h. side on the cab
Connector:	X33 - 3-Pin Connector for E04/1 and H44/1 Lights r.h. (Tractors with Cab)
Harness:	W02 - Main Wiring Harness
Specifications and Details:	12 V 21 W
Function:	Turn signal light

For extended checks, see also [SE16A - Turn Signal Lights, Diagnostic Schematic and Circuit Test](#) in this Section.

H44/2 - Turn Signal Light r.h. (Front Side) (Tractors without Cab)



Turn signal lights

Component Information

Component Information

Type:	Bayonet base lamp
Location:	R.h. side on the rear fender
Connector:	X25 - 4-Pin Connector for E04/2, E14, H33, H44/2 and H45 Lights r.h.
Harness:	W02 - Main Wiring Harness
Specifications and Details:	12 V 21 W
Function:	Turn signal light

For extended checks, see also [SE16A - Turn Signal Lights, Diagnostic Schematic and Circuit Test](#) in this Section.

H45 - Turn Signal Light r.h. (Rear side)



Turn signal lights (ROPS version)



Turn signal lights (cab version)

LEGEND:

- H35 Turn signal light l.h.
- H45 Turn signal light r.h.

Component Information

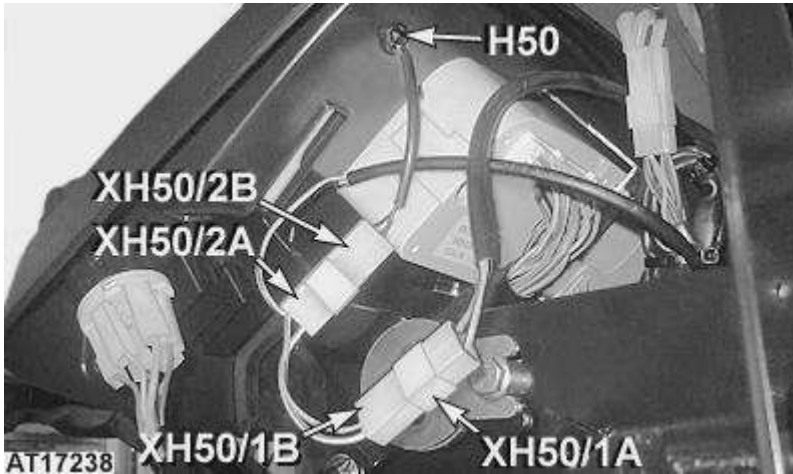
Component Information

Type:	Bayonet base lamp
Location:	R.h. side on the rear fender
Connector:	X25 - 4-Pin Connector for E04/2, E14, H33, H44/2 and H45 Lights r.h.
Harness:	W02 - Main Wiring Harness
Specifications and Details:	12 V 21 W
Function:	Turn signal light

For extended checks, see also [SE16A - Turn Signal Lights, Diagnostic Schematic and Circuit](#)

[Test](#) in this Section.

H50 - Warning Light (EHM or EHM II)



2-pin connector for warning light H50 (EHM)

LEGEND:

- H50 Warning light (EHM or EHM II)
- XH50/1 2-pin connector for warning light H50 (EHM or EHM II)
- XH50/2 2-pin connector for warning light H50 (EHM or EHM II)

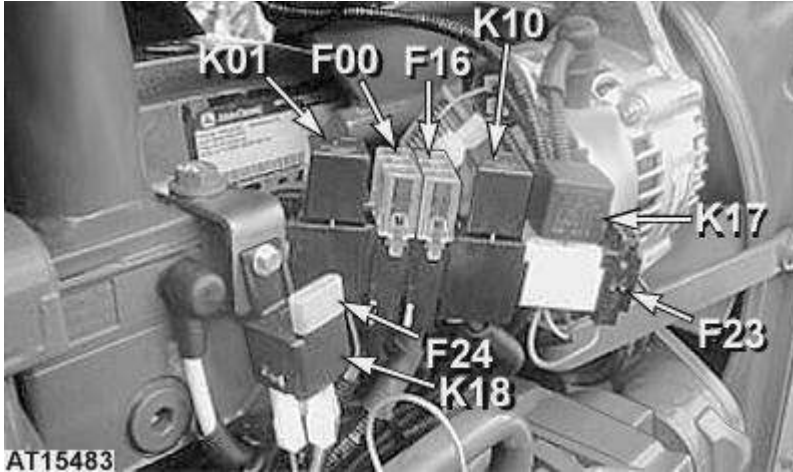
Component Information

Component Information

Type:	Bayonet base lamp
Location:	Instrument panel
Connector:	XH50 - 2-Pin Connector for Warning Light H50 (EHM or EHM II)
Harness:	W03 - 24/12-Speed Transmission Wiring Harness or W03 II - 24/12-Speed Transmission Wiring Harness (EHM II)
Specifications and Details:	12 V 4 W
Function:	Lights up if anything is not correct with the 24/12-speed transmission.

For extended checks, see also [SE26A - Warning Light and Oil Filter Restriction Sensor \(EHM\)](#), [Diagnostic Schematic and Circuit Test](#) or [SE26B - Warning Light and Oil Filter Restriction Sensor \(EHM II\)](#), [Diagnostic Schematic and Circuit Test](#) in this Section.

K01 - Starter Relay



Fuses and relays

LEGEND:

- F00 50 amp main fuse for main wiring circuit
- F16 50 amp main fuse for cab wiring circuit
- F23 7.5 amp fuse for shut-off system circuit (EHM)
- F24 20 amp fuse for electronic hitch sensing circuit (EHS)
- F24 II 20 amp fuse for electronic hitch sensing circuit (EHS II)
- K01 Starter relay
- K10 Intake air heater relay
- K17 Relay of shut-off system (EHM)
- K18 Relay of electronic hitch sensing (EHS)
- K18 II Relay of electronic hitch sensing (EHS II)

Component Information

Component Information

- Type:** Relay
- Location:** R.h. side of the engine near the alternator
- Connector:** [XK01 - 4-Pin Connector for Starter Relay K01](#)
- Harness:** [W01 - Engine Wiring Harness](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

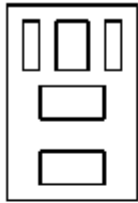
For extended checks, see also [SE01B - Starting System without EHM, Diagnostic Schematic and Circuit Test](#) or [SE01C - Starting System with EHM or EHM II, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

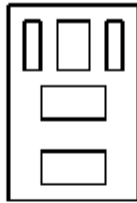
YES:The relay is in good condition.

NO:Replace the relay.

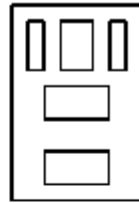
K02 - Hi-Lo Relay (ON)



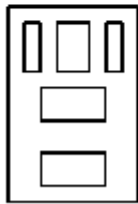
K02



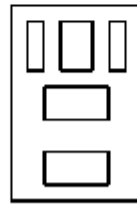
K04



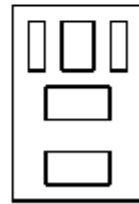
K06



K03



K05



K07

AT15513

Relay K02 - K07

LEGEND:

- K02 Hi-Lo relay (ON), high position
- K03 Hi-Lo relay (OFF), low position
- K04 Differential lock relay (ON)
- K05 Front-wheel drive relay
- K06 Differential lock relay (OFF)
- K07 PTO neutral start relay

Component Information

Component Information

- Type:** Relay
- Location:** In the fuse box
- Connector:** Plugged into fuse box or [XK02 - 5-Pin Connector for Hi-Lo Relay \(ON\)](#) (only for fuse and relay box II)
- Harness:** [W02 - Main Wiring Harness](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

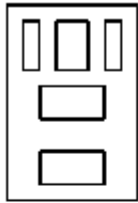
For extended checks, see also [SE26 - Hi-Lo Selection Switches \(EHM\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

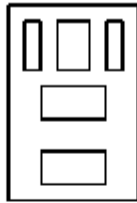
YES:The relay is in good condition.

NO:Replace the relay.

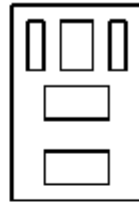
K03 - Hi-Lo Relay (OFF)



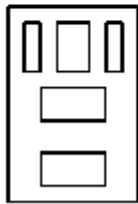
K02



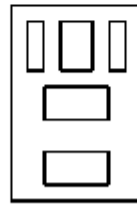
K04



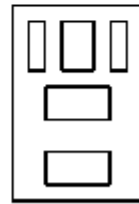
K06



K03



K05



K07

AT15513

Relay K02 - K07

LEGEND:

- K02 Hi-Lo relay (ON), high position
- K03 Hi-Lo relay (OFF), low position
- K04 Differential lock relay (ON)
- K05 Front-wheel drive relay
- K06 Differential lock relay (OFF)
- K07 PTO neutral start relay

Component Information

Component Information

- Type:** Relay
- Location:** In the fuse box
- Connector:** Plugged into fuse box or [XK03 - 5-Pin Connector for Hi-Lo Relay \(OFF\)](#) (only for fuse and relay box II)
- Harness:** [W02 - Main Wiring Harness](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

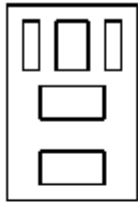
For extended checks, see also [SE26 - Hi-Lo Selection Switches \(EHM\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

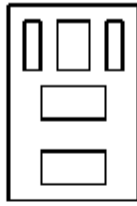
YES:The relay is in good condition.

NO:Replace the relay.

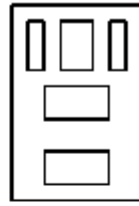
K04 - Differential Lock Relay (ON)



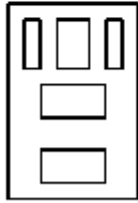
K02



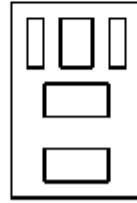
K04



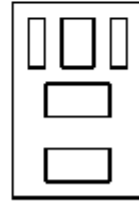
K06



K03



K05



K07

AT15513

Relay K02 - K07

LEGEND:

- K02 Hi-Lo relay (ON), high position
- K03 Hi-Lo relay (OFF), low position
- K04 Differential lock relay (ON)
- K05 Front-wheel drive relay
- K06 Differential lock relay (OFF)
- K07 PTO neutral start relay

Component Information

Component Information

- Type:** Relay
- Location:** In the fuse box
- Connector:** Plugged into fuse box or [XK04 - 5-Pin Connector for Differential Lock Relay \(ON\)](#) (only for fuse and relay box II)
- Harness:** [W02 - Main Wiring Harness](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

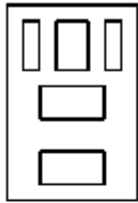
For extended checks, see also [SE16C - Differential Lock, Functional Schematic and Theory of Operation](#) or [SE26 - Differential Lock \(EHM\), Functional Schematic and Theory of Operation](#) in this Section.

Result:

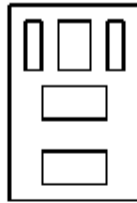
YES:The relay is in good condition.

NO:Replace the relay.

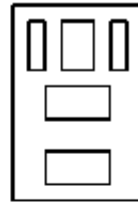
K05 - Front-Wheel Drive Relay



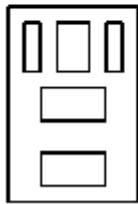
K02



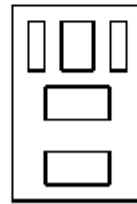
K04



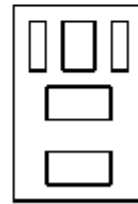
K06



K03



K05



K07

AT15513

Relay K02 - K07

LEGEND:

- K02 Hi-Lo relay (ON), high position
- K03 Hi-Lo relay (OFF), low position
- K04 Differential lock relay (ON)
- K05 Front-wheel drive relay
- K06 Differential lock relay (OFF)
- K07 PTO neutral start relay

Component Information

Component Information

- Type:** Relay
- Location:** In the fuse box
- Connector:** Plugged into fuse box or [XK05 - 5-Pin Connector for Front-Wheel Drive Relay](#) (only for fuse and relay box II)
- Harness:** [W02 - Main Wiring Harness](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

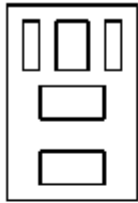
For extended checks, see also [SE16C - Stop Lights, Front-Wheel Drive Circuit and Parking Brake Circuit, Diagnostic Schematic and Circuit Test](#) or [SE26 - Front-Wheel Drive \(EHM\), Functional Schematic and Theory of Operation](#) in this Section.

Result:

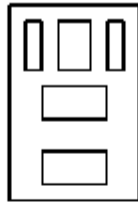
YES:The relay is in good condition.

NO:Replace the relay.

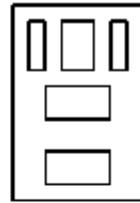
K06 - Differential Lock Relay (OFF)



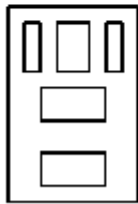
K02



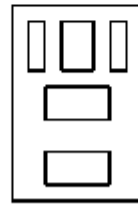
K04



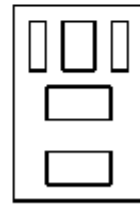
K06



K03



K05



K07

AT15513

Relay K02 - K07

LEGEND:

- K02 Hi-Lo relay (ON), high position
- K03 Hi-Lo relay (OFF), low position
- K04 Differential lock relay (ON)
- K05 Front-wheel drive relay
- K06 Differential lock relay (OFF)
- K07 PTO neutral start relay

Component Information

Component Information

- Type:** Relay
- Location:** In the fuse box
- Connector:** Plugged into fuse box or [XK06 - 5-Pin Connector for Differential Lock Relay \(OFF\)](#) (only for fuse and relay box II)
- Harness:** [W02 - Main Wiring Harness](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

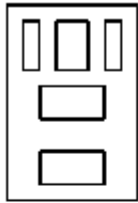
For extended checks, see also [SE16C - Differential Lock, Functional Schematic and Theory of Operation](#) or [SE26 - Differential Lock \(EHM\), Functional Schematic and Theory of Operation](#) in this Section.

Result:

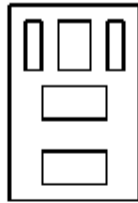
YES:The relay is in good condition.

NO:Replace the relay.

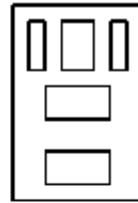
K07 - PTO Neutral Start Relay



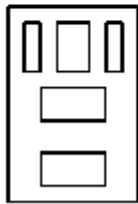
K02



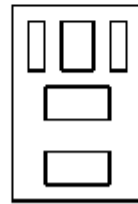
K04



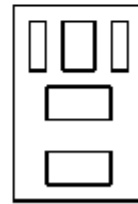
K06



K03



K05



K07

AT15513

Relay K02 - K07

LEGEND:

- K02 Hi-Lo relay (ON), high position
- K03 Hi-Lo relay (OFF), low position
- K04 Differential lock relay (ON)
- K05 Front-wheel drive relay
- K06 Differential lock relay (OFF)
- K07 PTO neutral start relay

Component Information

Component Information

- Type:** Relay
- Location:** In the fuse box
- Connector:** Plugged into fuse box or [XK07 - 5-Pin Connector for PTO Neutral Start Relay](#) (only for fuse and relay box II)
- Harness:** [W02 - Main Wiring Harness](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

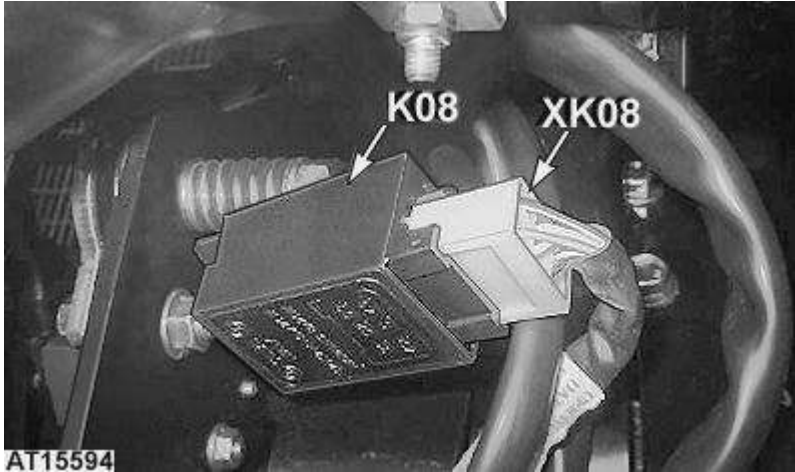
For extended checks, see also [SE01B - Starting System without EHM, Diagnostic Schematic and Circuit Test](#) or [SE01C - Starting System with EHM or EHM II, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The relay is in good condition.

NO:Replace the relay.

K08 - Turn/Warn Signal Relay



Turn/warn signal relay

LEGEND:

- K08 Turn/warn signal relay
- XK08 6-pin connector for turn/warn signal relay K08

Component Information

Component Information

- Type:** Turn/warn signal relay
- Location:** Below the instrument panel
- Connector:** [XK08 - 6-Pin Connector for Turn/Warn Signal Relay K08](#)
- Harness:** [W02 - Main Wiring Harness](#)
- Specifications and Details:** See component check below:
- Components:** [XK08 - 6-Pin Connector for Turn/Warn Signal Relay K08](#)

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

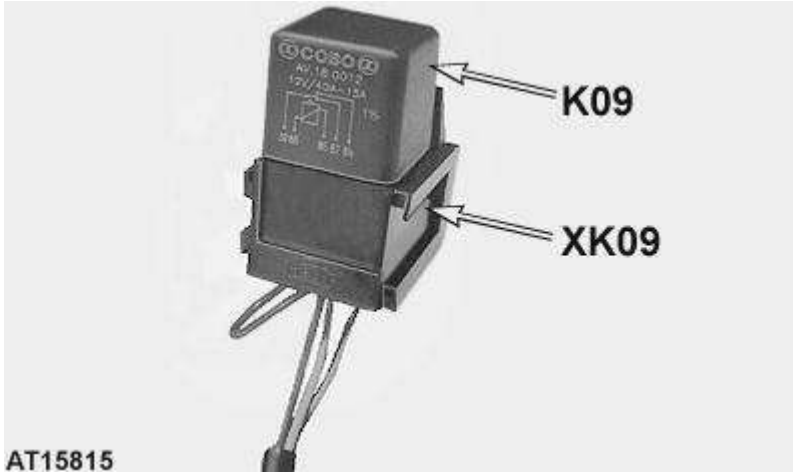
For extended checks, see also [SE16A - Turn Signal Lights, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The relay is in good condition.

NO:Replace the relay.

K09 - Trailer Brake Relay



Trailer brake relay

LEGEND:

- K09 Trailer brake relay
- XK09 5-pin connector for trailer brake relay K09

Component Information

Component Information

- Type:** Relay
- Location:** Below the r.h. fender
- Connector:** [XK09 - 5-Pin Connector for Trailer Brake Relay K09](#)
- Harness:** [W13 - Trailer Brake Valve Wiring Harness](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

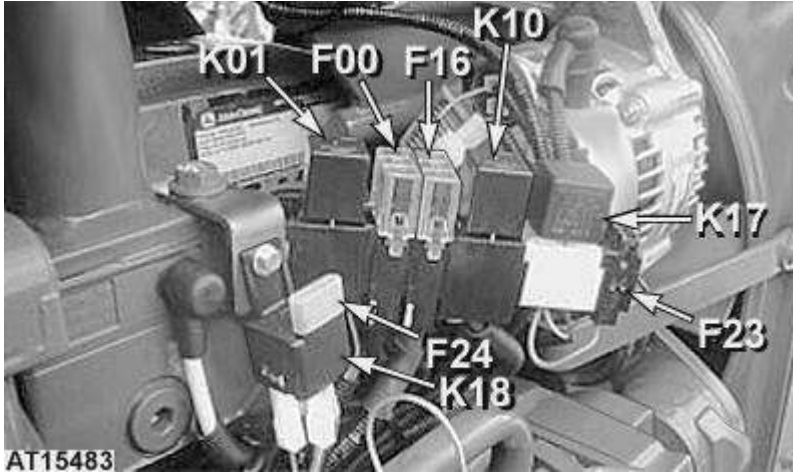
There should never be any continuity between pins 87 (5) and 87A (4).

Result:

YES:The relay is in good condition.

NO:Replace the relay.

K10 - Intake Air Heater Relay



Fuses and relays

LEGEND:

- F00 50 amp main fuse for main wiring circuit
- F16 50 amp main fuse for cab wiring circuit
- F23 7.5 amp fuse for shut-off system circuit (EHM)
- F24 20 amp fuse for electronic hitch sensing circuit (EHS)
- F24 II 20 amp fuse for electronic hitch sensing circuit (EHS II)
- K01 Starter relay
- K10 Intake air heater relay
- K17 Relay of shut-off system (EHM)
- K18 Relay of electronic hitch sensing (EHS)
- K18 II Relay of electronic hitch sensing (EHS II)

Component Information

Component Information

- Type:** Relay
- Location:** R.h. side of the engine near the alternator
- Connector:** [XK10 - 4-Pin Connector for Intake Air Heater Relay K10](#)
- Harness:** [W10 - Intake Air Heater Wiring Harness](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

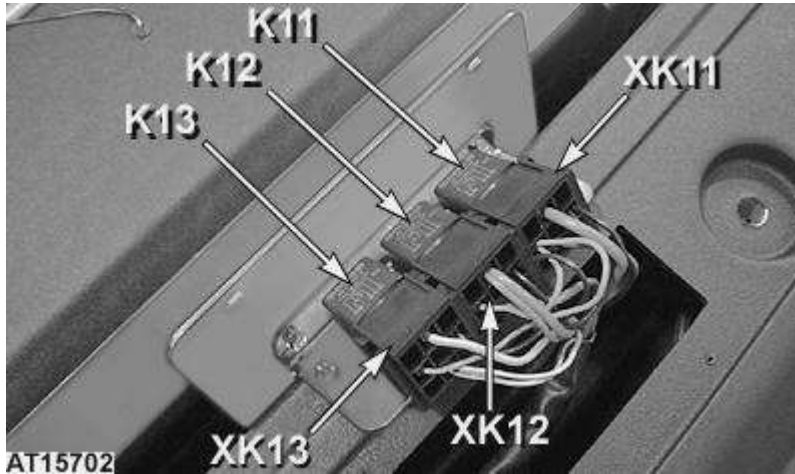
For extended checks, see also [SE01E - Intake Air Heater, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The relay is in good condition.

NO:Replace the relay.

K11 - Relay of Fan Motor (Tractors with Cab)



Relays K11, K12 and K13

LEGEND:

- XK11 5-pin connector for relay of fan motor (tractors with cab)
- XK12 5-pin connector for rear work light relay (tractors with cab)
- XK13 5-pin connector for front work light relay (tractors with cab)
- K11 Relay of fan motor (tractors with cab)
- K12 Rear work light relay (tractors with cab)
- K13 Front work light relay (tractors with cab)

Component Information

Component Information

- Type:** Relay
- Location:** In the roof.
- Connector:** [XK11 - 5-Pin Connector for Relay of Fan Motor \(Tractors with Cab\)](#)
- Harness:** [W05 - Cab Wiring Harness](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

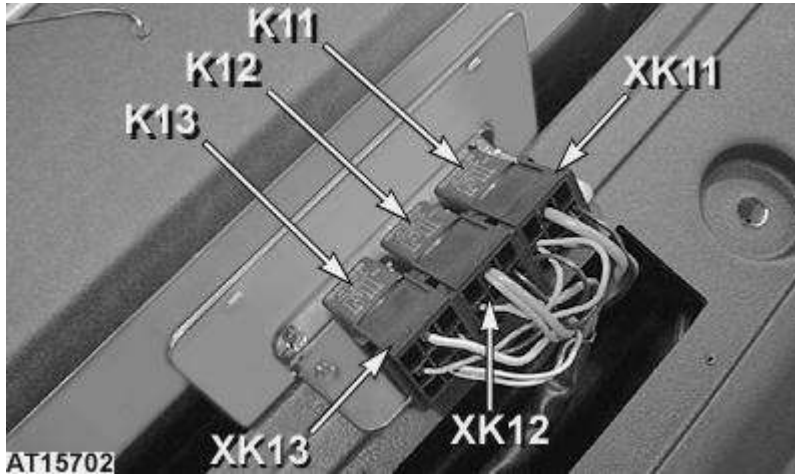
For extended checks, see also [SE10A - Fan Motor M07, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The relay is in good condition.

NO:Replace the relay.

K12 - Rear Work Light Relay (Tractors with Cab)



Relays K11, K12 and K13

LEGEND:

- XK11 5-pin connector for relay of fan motor (tractors with cab)
- XK12 5-pin connector for rear work light relay (tractors with cab)
- XK13 5-pin connector for front work light relay (tractors with cab)
- K11 Relay of fan motor (tractors with cab)
- K12 Rear work light relay (tractors with cab)
- K13 Front work light relay (tractors with cab)

Component Information

Component Information

- Type:** Relay
- Location:** In the roof.
- Connector:** [XK12 - 5-Pin Connector for Rear Work Light Relay \(Tractors with Cab\)](#)
- Harness:** [W05 - Cab Wiring Harness](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

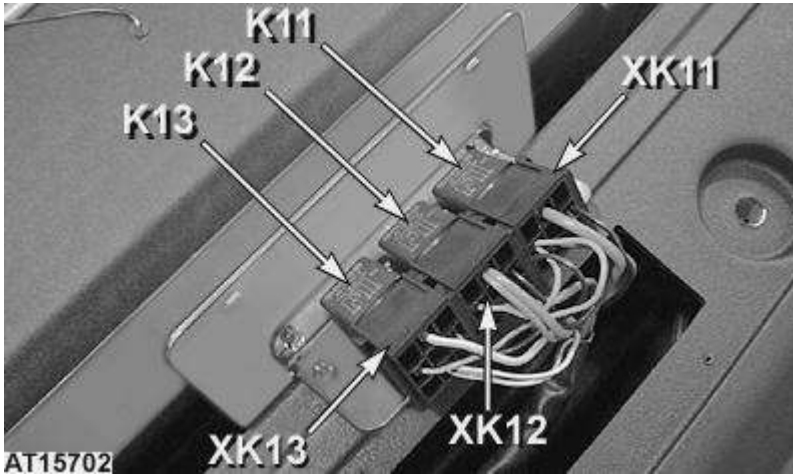
For extended checks, see also [SE07B - Rear Work Lights E11 \(Cab Only\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The relay is in good condition.

NO:Replace the relay.

K13 - Front Work Light Relay (Tractors with Cab)



Relays K11, K12 and K13

LEGEND:

- XK11 5-pin connector for relay of fan motor (tractors with cab)
- XK12 5-pin connector for rear work light relay (tractors with cab)
- XK13 5-pin connector for front work light relay (tractors with cab)
- K11 Relay of fan motor (tractors with cab)
- K12 Rear work light relay (tractors with cab)
- K13 Front work light relay (tractors with cab)

Component Information

Component Information

- Type:** Relay
- Location:** In the roof.
- Connector:** [XK13 - 5-Pin Connector for Front Work Light Relay \(Tractors with Cab\)](#)
- Harness:** [W05 - Cab Wiring Harness](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

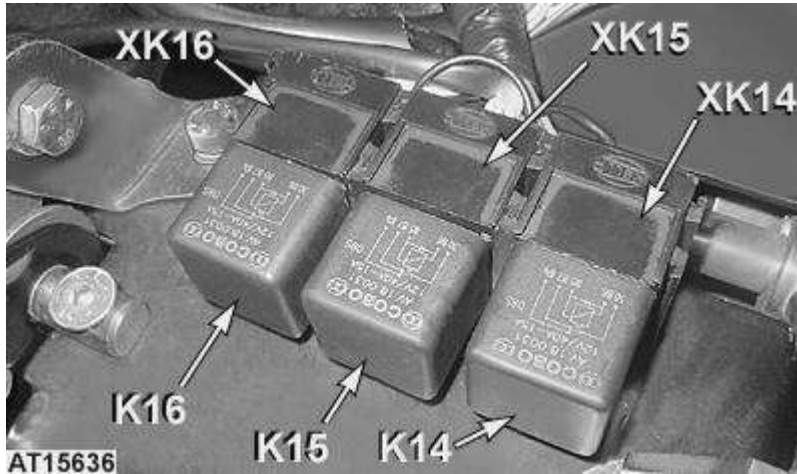
For extended checks, see also [SE07B - Front Work Lights E18 \(Cab Only\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The relay is in good condition.

NO:Replace the relay.

K14 - Front-Wheel Drive Relay (EHM or EHM II)



Relays K14, K15 and K16

LEGEND:

- K14 Front-wheel drive relay (EHM or EHM II)
- K15 Declutch relay (EHM or EHM II)
- K16 Neutral start relay (EHM or EHM II)
- XK14 5-pin connector for front-wheel drive relay K14 (EHM or EHM II)
- XK15 5-pin connector for declutch relay K15 (EHM or EHM II)
- XK16 5-pin connector for neutral start relay K16 (EHM or EHM II)

Component Information

Component Information

- Type:** Relay
- Location:** Near the fuse box.
- Connector:** [XK14 - 5-Pin Connector for Front-Wheel Drive Relay K14 \(EHM or EHM II\)](#)
- Harness:** [W03 - 24/12-Speed Transmission Wiring Harness](#)
or
[W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

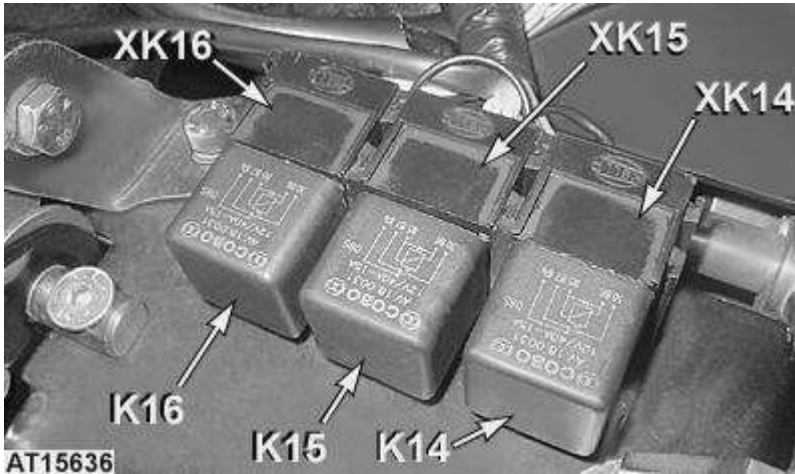
For extended checks, see also [SE26A - Electro-Hydraulic Management \(EHM\) \(Summary of References\)](#) or [SE26B - Electro-Hydraulic Management \(EHM II\) \(Summary of References\)](#) in this Section.

Result:

YES:The relay is in good condition.

NO:Replace the relay.

K15 - Declutch Relay (EHM or EHM II)



Relays K14, K15 and K16

LEGEND:

- K14 Front-wheel drive relay (EHM or EHM II)
- K15 Declutch relay (EHM or EHM II)
- K16 Neutral start relay (EHM or EHM II)
- XK14 5-pin connector for front-wheel drive relay K14 (EHM or EHM II)
- XK15 5-pin connector for declutch relay K15 (EHM or EHM II)
- XK16 5-pin connector for neutral start relay K16 (EHM or EHM II)

Component Information

Component Information

- Type:** Relay
- Location:** Near the fuse box.
- Connector:** [XK15 - 5-Pin Connector for Declutch Relay K15 \(EHM or EHM II\)](#)
- Harness:** [W03 - 24/12-Speed Transmission Wiring Harness](#)
or
[W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

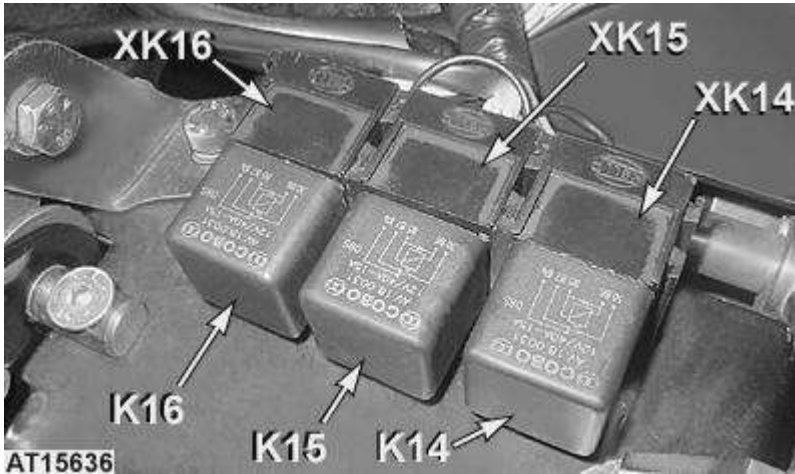
For extended checks, see also [SE26A - Electro-Hydraulic Management \(EHM\) \(Summary of References\)](#) or [SE26B - Electro-Hydraulic Management \(EHM II\) \(Summary of References\)](#) in this Section.

Result:

YES:The relay is in good condition.

NO:Replace the relay.

K16 - Neutral Start Relay (EHM or EHM II)



Relays K14, K15 and K16

LEGEND:

- K14 Front-wheel drive relay (EHM or EHM II)
- K15 Declutch relay (EHM or EHM II)
- K16 Neutral start relay (EHM or EHM II)
- XK14 5-pin connector for front-wheel drive relay K14 (EHM or EHM II)
- XK15 5-pin connector for declutch relay K15 (EHM or EHM II)
- XK16 5-pin connector for neutral start relay K16 (EHM or EHM II)

Component Information

Component Information

- Type:** Relay
- Location:** Near the fuse box.
- Connector:** [XK16 - 5-Pin Connector for Neutral Start Relay K16 \(EHM or EHM II\)](#)
- Harness:** [W03 - 24/12-Speed Transmission Wiring Harness](#)
or
[W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

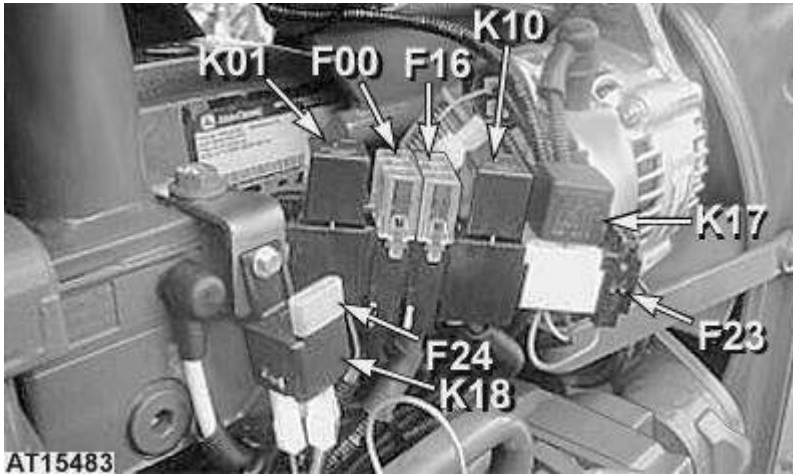
For extended checks, see also [SE01B - Starting System without EHM, Diagnostic Schematic and Circuit Test](#) or [SE01C - Starting System with EHM or EHM II, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The relay is in good condition.

NO:Replace the relay.

K17 - Relay of Shut-Off System (EHM)



Fuses and relays

LEGEND:

- F00 50 amp main fuse for main wiring circuit
- F16 50 amp main fuse for cab wiring circuit
- F23 7.5 amp fuse for shut-off system circuit (EHM)
- F24 20 amp fuse for electronic hitch sensing circuit (EHS or EHS II)
- K01 Starter relay
- K10 Intake air heater relay
- K17 Relay of shut-off system (EHM)
- K18 Relay of electronic hitch sensing (EHS or EHS II)

Component Information

Component Information

- Type:** Relay
- Location:** R.h. side of the engine near the alternator
- Connector:** [XK17 - 4-Pin Connector for Relay K17 \(EHM\)](#)
- Harness:** [W12 - Shut-Off System Wiring Harness \(EHM\)](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

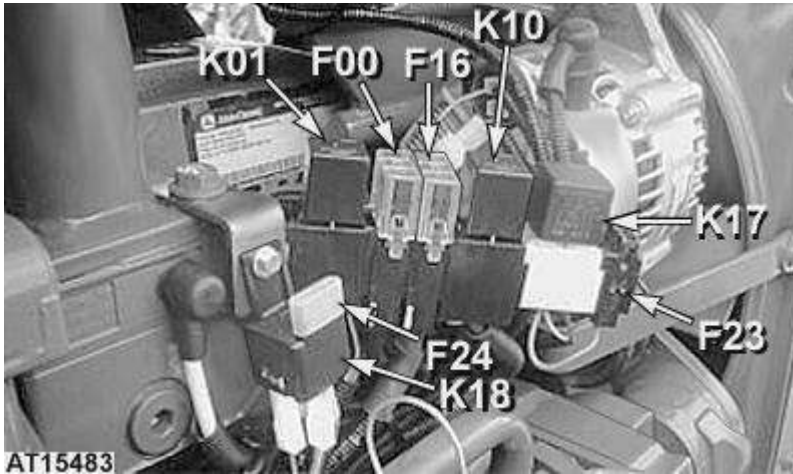
For extended checks, see also [SE26A - Shut-Off System \(EHM\), Functional Schematic and Theory of Operation](#) in this Section.

Result:

YES:The relay is in good condition.

NO:Replace the relay.

K18 - Relay of Electronic Hitch Sensing (EHS)



Fuses and relays

LEGEND:

- F00 50 amp main fuse for main wiring circuit
- F16 50 amp main fuse for cab wiring circuit
- F23 7.5 amp fuse for shut-off system circuit (EHM)
- F24 20 amp fuse for electronic hitch sensing circuit (EHS II)
- F24 II 20 amp fuse for electronic hitch sensing circuit (EHS II)
- K01 Starter relay
- K10 Intake air heater relay
- K17 Relay of shut-off system (EHM)
- K18 Relay of electronic hitch sensing (EHS)
- K18 II Relay of electronic hitch sensing (EHS II)

Component Information

Component Information

- Type:** Relay
- Location:** R.h. side of the engine near the alternator
- Connector:** [XK18 - 4/1-Pin Connectors for Relay K18 \(EHS\)](#)
- Harness:** [W11 - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

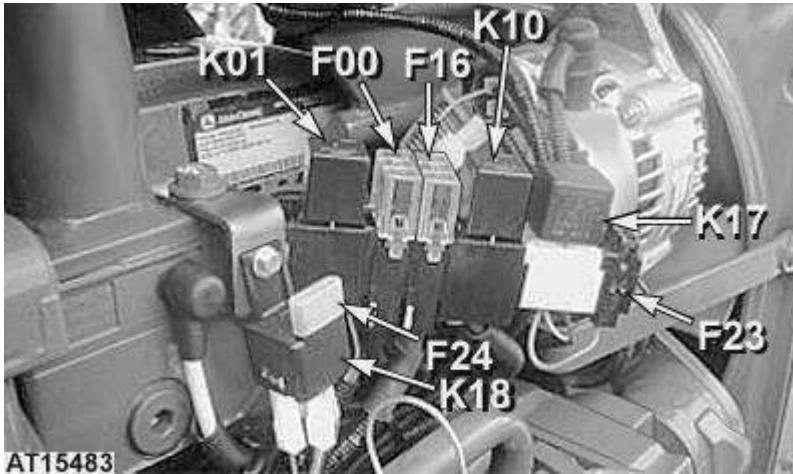
For extended checks, see also [SE15A - Power Supply of EHS System, Diagnostic Schematic and Circuit Test](#) or [SE15A - Electronic Hitch Sensing \(EHS\) \(Summary of References\)](#) in this Section.

Result:

YES:The relay is in good condition.

NO:Replace the relay.

K18 II - Relay of Electronic Hitch Sensing (EHS II)



Fuses and relays

LEGEND:

- F00 50 amp main fuse for main wiring circuit
- F16 50 amp main fuse for cab wiring circuit
- F23 7.5 amp fuse for shut-off system circuit (EHM)
- F24 20 amp fuse for electronic hitch sensing circuit (EHS II)
- F24 II 20 amp fuse for electronic hitch sensing circuit (EHS II)
- K01 Starter relay
- K10 Intake air heater relay
- K17 Relay of shut-off system (EHM)
- K18 Relay of electronic hitch sensing (EHS)
- K18 II Relay of electronic hitch sensing (EHS II)

Component Information

Component Information

- Type:** Relay
- Location:** R.h. side of the engine near the alternator
- Connector:** [XK18 II - 4/1-Pin Connectors for Relay K18 II \(EHS II\)](#)
- Harness:** [W11 II - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)
- Specifications and Details:** See component check below:

Component check

(1) Relay

Action:

Remove the relay.

Use a [JT05791A](#) multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

Item	Measurement	Specification
Relay		
Relay coil:	Resistance	approx. 75 - 90 ohms
Relay coil de-energized:	Continuity	30 (3) and 87 (5) open
	Continuity	30 (3) and 87A (4) closed
Relay coil energized:	Continuity	30 (3) and 87 (5) closed
	Continuity	30 (3) and 87A (4) open

There should never be any continuity between pins 87 (5) and 87A (4).

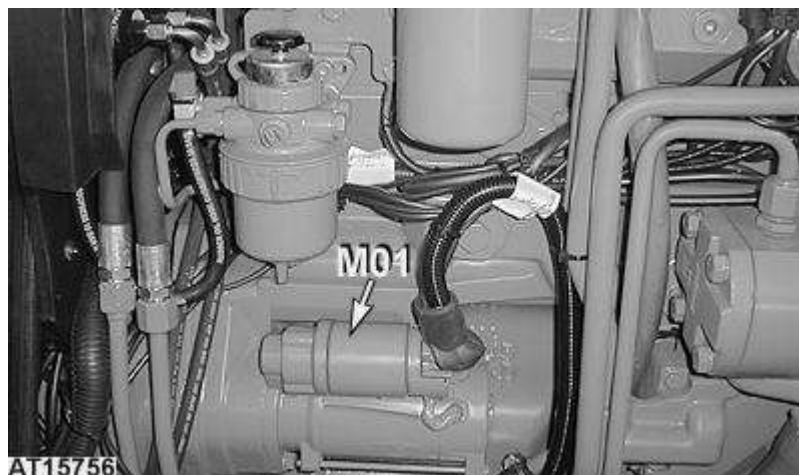
For extended checks, see also [SE15B - Power Supply of EHS II System, Diagnostic Schematic and Circuit Test](#) or [SE15B - Electronic Hitch Sensing \(EHS II\) \(Summary of References\)](#) in this Section.

Result:

YES:The relay is in good condition.

NO:Replace the relay.

M01 - Starter Motor



Starter motor

Component Information

Component Information

- Type:** Starter motor
- Location:** R.h. side of the engine
- Connector:** [XM01 - Connector for Starter Motor M01](#)
- Harnesses:** [W01 - Engine Wiring Harness](#)
[W04 - Engine/Cab Wiring Harness](#)
[W10 - Intake Air Heater Wiring Harness](#)
[W11 - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
[W12 - Shut-Off System Wiring Harness \(EHM\)](#)
- Specifications and Details:** See component check below:
- Function:** Starts the engine.

M01 - Starter Motor

(1) Voltage Check at Starting Motor

Action:

→NOTE:

Battery level of charge must be 12.4 volts (1.225 specific gravity).

Put transmission in neutral or park.

Voltages at pin 30 of starting motor and at battery positive terminal must be equal.

If the main (key) switch is turned to the START position, there should be battery voltage present at pin 50 on the starting motor. If the starting motor turns, this voltage drops to 8.5 - 10.7 volts.

Result:

YES: [GO TO 2](#)

NO: Check harness and eliminate faults. [GO TO 2](#)

(2) Operational Check of Starting Motor

Action:

→NOTE:

Battery level of charge must be 12.4 volts (1.225 specific gravity).

Put transmission in neutral or park.

Turn main switch to start position.

Engine should start within 4 to 10 seconds.

Result:

YES:Engine starts. Starting circuit OK. END OF TEST

NO:Cranking speed is slow. [GO TO 4](#)

NO:Starting motor does not operate. [GO TO 3](#)

NO:Starting motor operates but engine does not crank: Check starting motor pinion and replace if necessary.

(3) Continuity Check of Solenoid Switch and Field Winding

Action:

→NOTE:

Disconnect pin 50 and harness before carrying out the continuity test.

Use a [JT05791A](#) multimeter to measure resistance between pin 50 of starting motor and starting motor housing:

Item	Measurement	Specification
Solenoid switch and field winding of starting motor M01		
Solenoid switch and field winding:	Resistance	approx. 0.3 ohms

 CAUTION:

Current draw of solenoid switch coil cannot be measured with the multimeter, as current peaks occur for a short period of time. The multimeter would be destroyed by these current peaks.

The lead connected to pin 50 of the starting motor is not protected by a fuse and must never be connected to ground during starting procedure, as this would burn the lead out.

Result:

YES: Starting motor solenoid switch and field winding OK. [GO TO 5](#)

NO: Solenoid switch or field winding interrupted: Remove starting motor and repair.

(4) Causes for Low Starting Motor Cranking Speed

Action:

- Battery level of charge is below 12.4 volts (1.225 specific gravity).
- Engine oil has incorrect viscosity for temperatures below 0°C (32°F).
- Greater than a 0.4 volt drop in battery positive cable while cranking engine.
- Greater than a 0.7 volt drop in battery negative cable while cranking engine.
- Greater than a 0.2 volt drop across starter solenoid switch terminals while cranking engine.
- Poor starting motor housing ground.
- Poor battery terminal connection.
- Starting motor defective.

Result:

NO:Repair system and then [GO TO 2](#)

(5) Causes for Starting Motor not Operating At All

Action:

- Starting motor solenoid defective.
- Poor starting motor solenoid ground.
- Poor starting motor ground.
- Starting motor defective.
- Poor battery terminal connection.
- Low voltage at starting motor battery terminal while cranking.
- Low voltage at pin 50 of starting motor.

For extended checks, see also [SE01B - Starting System without EHM, Diagnostic Schematic and Circuit Test](#) or [SE01C - Starting System with EHM or EHM II, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

NO:Repair system and then [GO TO 2](#)

M02 - Air-Conditioning Compressor Clutch



Air-conditioning compressor clutch

LEGEND:

M02 Air-conditioning compressor clutch

Component Information

Component Information

Type:	Electro-magnetic clutch
Location:	Above the engine
Connector:	XM02 - 1-Pin Connector for Air-Conditioning Compressor Clutch M02
Harness:	W04 - Engine/Cab Wiring Harness
Specifications and Details:	See test below

Component Check

(1) M02 - Air-Conditioning Compressor Clutch

Action:

→NOTE:

The compressor clutch must be electrically removed from the circuit before resistance is checked.

Use a [JT05791A](#) multimeter to measure resistance between pin A and ground:

Item	Measurement	Specification
M02 - Air-Conditioning Compressor Clutch		
Clutch coil:	Resistance	approx. 3.5 - 4.0 ohms
Current draw:	Current	approx. 2.5 amps

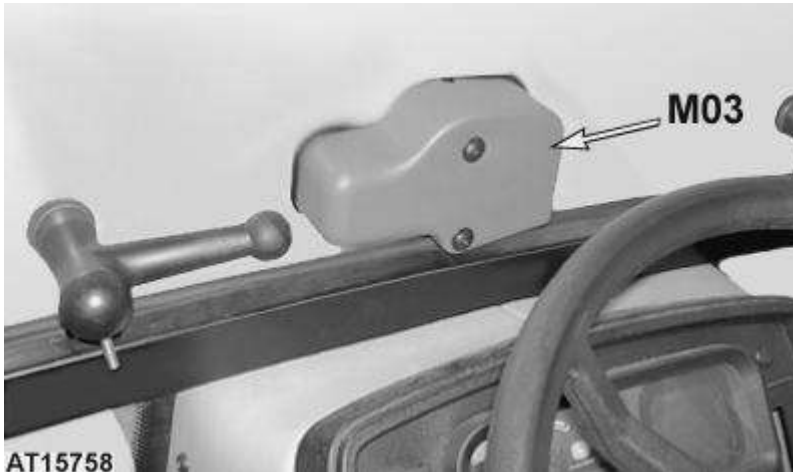
For extended checks, see also [SE10B - Air-Conditioning System, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The compressor clutch is in good condition.

NO:Replace the compressor clutch.

M03 - Front Wiper Motor



Front wiper motor

LEGEND:

M03 Front wiper motor

Component Information

Component Information

- Type:** Wiper motor
- Location:** On the windshield
- Connector:** [XM03 - 2-Pin Connector for Front Wiper Motor M03](#)
- Harness:** [W05 - Cab Wiring Harness](#)
- Specifications and Details:** See component test below:

Component Check

(1) Wiper Motor

Action:

→NOTE:

The wiper motor undergoing the test must be electrically removed from the circuit when resistance is measured.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B (for stage 1) and between A and C (for stage 2):

Item	Measurement	Specification
Wiper Motor		
Motor coil (stage 1):	Resistance	approx. 1.3 ohms
Motor coil (stage 2):	Resistance	approx. 1 ohms
Current draw (stage 1):	Current	approx. 1.4 amps
Current draw (stage 2):	Current	approx. 2.6 amps

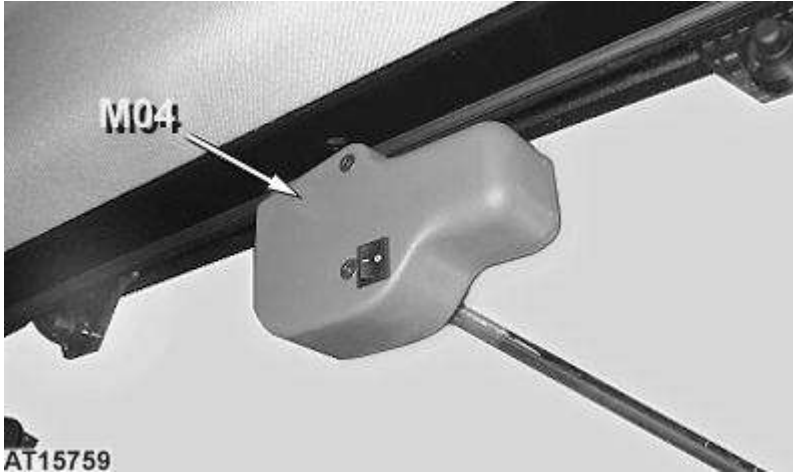
For extended checks, see also [SE11 - Wiper and Washer System, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The motor is in good condition.

NO:Replace the motor.

M04 - Rear Wiper Motor with Switch



Rear wiper motor with switch

LEGEND:

M04 Rear wiper motor with switch

Component Information

Component Information

Type:	Wiper motor
Location:	On the rear window
Connector:	XM04 - 2-Pin Connector for Rear Wiper Motor with Switch M04
Harness:	W05 - Cab Wiring Harness
Specifications and Details:	See component test below:

Component Check

(1) Wiper Motor

Action:

→NOTE:

The wiper motor undergoing the test must be electrically removed from the circuit when resistance is measured.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B (for stage 1) and between A and C (for stage 2):

Item	Measurement	Specification
Wiper Motor		
Motor coil (stage 1):	Resistance	approx. 1.3 ohms
Motor coil (stage 2):	Resistance	approx. 1 ohms
Current draw (stage 1):	Current	approx. 1.4 amps
Current draw (stage 2):	Current	approx. 2.6 amps

For extended checks, see also [SE11 - Wiper and Washer System, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The motor is in good condition.

NO:Replace the motor.

M05 - Pump of Washer System



Pump of washer system

LEGEND:

M05 Pump of washer system

Component Information

Component Information

Type:	Pump
Location:	Rear side of tractor
Connector:	XM05 - 2-Pin Connector for Pump of Washer System M05
Harness:	W05 - Cab Wiring Harness
Specifications and Details:	See component test below:

Component Check

(1) M05 - Pump of Washer System

Action:

→NOTE:

The pump undergoing the test must be electrically removed from the circuit when resistance is measured.

Use a [JT05791A](#) multimeter to measure resistance between pins E and A:

Item	Measurement	Specification
M05 - Pump of Washer System		
Motor coil:	Resistance	approx. 1 ohms
Current draw:	Current	approx. 2.6 amps

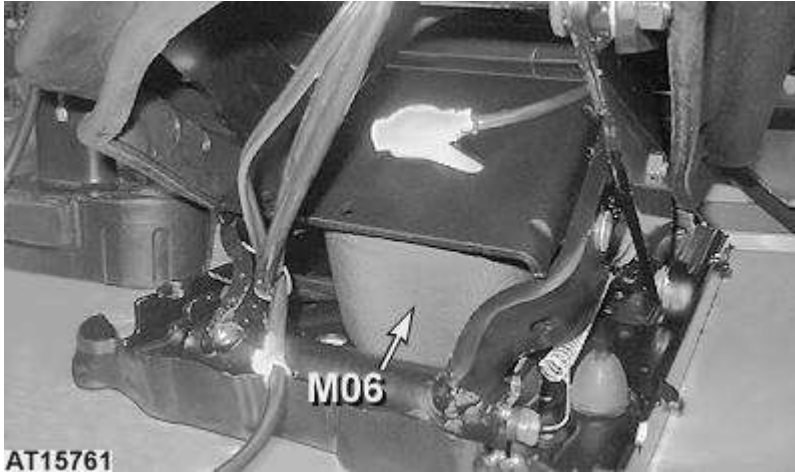
For extended checks, see also [SE11 - Wiper and Washer System, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The pump is in good condition.

NO:Replace the pump.

M06 - Air Suspension Seat Compressor Motor



Air suspension seat compressor motor

LEGEND:

M06 Air suspension seat compressor motor

Component Information

Component Information

Type:	Compressor motor
Location:	Below the seat
Connector:	XM06 - 2-Pin Connector for Air Suspension Seat Compressor Motor M06
Harness:	W02 - Main Wiring Harness
Specifications and Details:	See component check below:
Function:	Provides compressed air for the seat suspension.

Component Check

(1) M06 - Air Suspension Seat Compressor Motor

Action:

→NOTE:

Unplug the operator's seat from the wiring harness.

Use a [JT05791A](#) multimeter to measure for resistance between pins A and B on the plug at the operator's seat:

Item	Measurement	Specification
Seat compressor:	Resistance	approx. 0.8 ohms

For extended checks, see also [SE14B - Air Suspension Seat Compressor Motor M06, Functional Schematic and Theory of Operation](#) in this Section.

Result:

YES:The operator's seat is OK.

NO:Replace the relevant components.

M07 - Fan Motor



Fan motor

LEGEND:

M07 Fan motor

Component Information

Component Information

Type:	Fan motor
Location:	In the roof
Connector:	XM07 - 3-Pin Connectors for Fan Motor M07
Harness:	W14 - Fan and Air-Conditioning Wiring Harness
Specifications and Details:	See component check below:

Component Check

(1) M07 - Fan Motor

Action:

→NOTE:

The fan motor undergoing the test must be electrically removed from the circuit when resistance is measured.

Use a [JT05791A](#) multimeter to measure resistance between pins E and A:

Item	Measurement	Specification
M07 - Fan Motor		
Motor coil:	Resistance	approx. 1 ohm
Current draw:	Current	approx. 9 amps

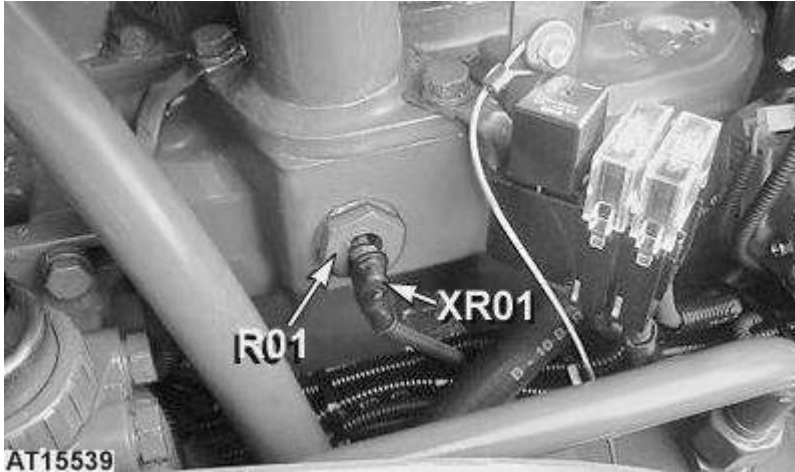
For extended checks, see also [SE10A - Fan Motor M07, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The fan motor is in good condition.

NO:Replace the fan motor.

R01 - Intake Air Heater (3-Cyl.)



Intake air heater (3-cyl.)

LEGEND:

- XR01 1-pin connector for intake air heater R01 (3-cyl.)
- R01 Intake air heater (3-cyl.)

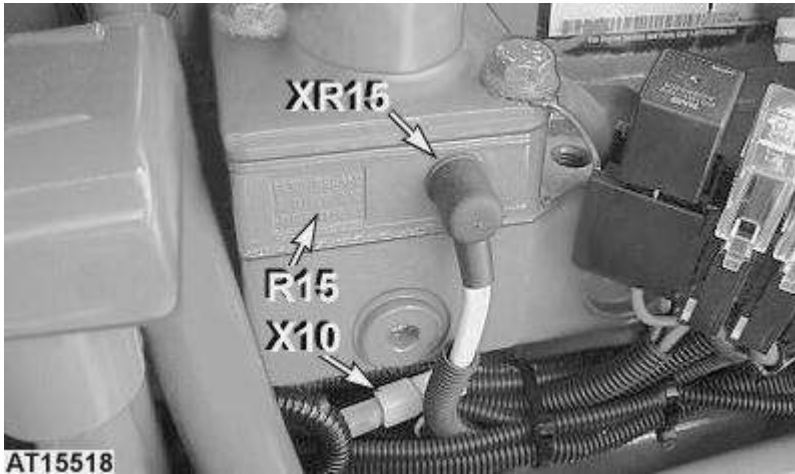
Component Information

Component Information

- Type:** Resistor
- Location:** Air intake manifold
- Connector:** [XR01 - 1-Pin Connector for Intake Air Heater R01 \(3-Cyl.\)](#)
- Harness:** [W01 - Engine Wiring Harness](#)
- Function:** Heats up the intake air.

For extended checks, see also [SE01E - Intake Air Heater, Diagnostic Schematic and Circuit Test](#) in this Section.

R15 - Intake Air Heater (4-Cyl.)



Intake air heater (4-cyl.)

LEGEND:

- R15 Intake air heater (4-cyl.)
- X10 1-pin interconnection between wiring harnesses W01 and W10
- XR15 1-pin connector for intake air heater R15 (4-cyl.) (white lead)

Component Information

Component Information

Type:	Resistor
Location:	Air intake manifold
Connector:	XR15 - 1-Pin Connector for Intake Air Heater R15 (4-Cyl.)
Harness:	W01 - Engine Wiring Harness
Specifications and Details:	See component check below:
Function:	Heats up the intake air.

Component Check

(1) R15 - Intake Air Heater (4-Cyl.)

Action:

⚠ CAUTION:

Do not apply battery voltage directly to the heating element, as the high power flow could result in burning of the contacts.

Therefore only operate the heating element when installed and via the appropriate relay.

Measure current draw using [JT02153](#) Current Clamp-On Probe.

→NOTE:

The heating element must be electrically removed from the circuit when resistance is measured.

Use a [JT05791A](#) multimeter to measure resistance between pin A on the heating element and the heating element housing.

Item	Measurement	Specification
R15 - Intake Air Heater (4-Cyl.)		
Heating coil:	Resistance	approx. 0.2 ohms
Current draw:	Current	approx. 60 amps
Power consumption:	Power	1200 W

→NOTE:

By performing a visual check, a defective heating element (removed) can be recognized in most cases by burnt, melted or interrupted heater coils.

For extended checks, see also [SE01E - Intake Air Heater, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES: Heating element is in good condition.

NO: Replace the heating element.

S01 - Main Switch



Main switch

LEGEND:

S01 Main switch

Component Information

Component Information

Type:	Switch
Location:	Under instrument panel
Connector:	XS01 - 6/1-Pin Connectors for Main Switch S01
Harness:	W02 - Main Wiring Harness
Specifications and Details:	See component check below:
Function:	Activates different electrical circuits

Component Check

(1) Main Switch S01

Action:

The following truth table defines main switch operation.

→NOTE:

The main switch must be electrically removed from the starting circuit when performing continuity tests.

Truth table for main (key) switch

Switch Position:	Switch Terminals						
	ACC	BAT1	BAT2	IGN	ST	AID	GND ELX
ACC	X	X	X				
OFF		X	X				
RUN	X	X	X	X		X [Push main switch in to activate]	X
START		X	X	X	X	X [Push main switch in to activate]	X

For extended checks, see also [SE01A - Power Supply, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:Switch is in good condition.

NO:Replace the switch.

S08 - Turn Signal Light Switch



Turn signal light switch

LEGEND:

S08 Turn signal light switch

Component Information

Component Information

Type:	Switch
Location:	On the instrument panel l.h.
Connector:	XS08 - 3/1-Pin Connectors for Turn Signal Light Switch S08
Harness:	W02 - Main Wiring Harness
Specifications and Details:	See component check below:

Component Check

(1) S08 - Turn Signal Light Switch

Action:

→NOTE:

Unplug the turn signal switch from the wiring harness.

Use a [JT05791A](#) multimeter to measure for continuity between pins 1 and 2 and between pins 2 and 3 on the switch:

The switch consists of a changeover contact with a mid-position. Three positions may be selected.

Item	Measurement	Specification
S08 - Turn Signal Light Switch		
Switch in OFF Position:	Continuity	1 and 2 open
	Continuity	2 and 3 open
Switch in LEFT Position:	Continuity	1 and 2 closed
	Continuity	2 and 3 open
Switch in RIGHT Position:	Continuity	1 and 2 open
	Continuity	2 and 3 closed

Pins 1 and 3 should never indicate continuity.

For extended checks, see also [SE16A - Turn Signal Lights, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES: Switch is in good condition.

NO: Replace the switch.

S09 - Light and Horn Switch



Light and horn switch

LEGEND:

S09 Light and horn switch

Component Information

Component Information

Type:	Switch
Location:	On the instrument panel r.h.
Connector:	XS09 - 6/1-Pin Connectors for Light and Horn Switch S09
Harness:	W02 - Main Wiring Harness
Specifications and Details:	See component check below:

Component Check

(1) S09 - Light and Horn Switch

Action:

The following truth table defines light and horn switch operation.

→NOTE:

The light and horn switch must be electrically removed from the starting circuit when performing continuity tests.

Truth table for light and horn switch

Switch Position:	Switch Terminals					
	A	B	C	D	E	F
OFF						
Horn		X		X		
1 (parking)	X					X
2 (low beam)	X		X			X
3 (high beam)	X			X	X	

For extended checks, see also [SE06B - Headlights, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:Switch is in good condition.

NO:Replace the switch.

S11 - H4 Farm Headlight Switch



S11 - H4 farm headlight switch

LEGEND:

S11 H4 farm headlight switch

XS11 10-pin connector for H4 farm headlight switch S11

Component Information

Component Information

Type:	Switch
Location:	On the molding l.h.
Connector:	XS11 - 10-Pin Connector for H4 Farm Headlight Switch S11
Harness:	W07 - H4 Farm Headlight Wiring Harness
Specifications and Details:	See component check below:

Component Check

(1) S11 - H4 Farm Headlight Switch

Action:

→NOTE:

Unplug the switch from the wiring harness.

Use a [JT05791A](#) multimeter to measure for continuity between pins 1, 2 and 3 and between pins 4, 5 and 6 on the switch:

The switch consists of a changeover contact. When actuated, the switch must change over.

Item	Measurement	Specification
S11 - H4 Farm Headlight Switch		
Switch not actuated:	Continuity	2 and 1 closed
		5 and 4 closed
	Continuity	2 and 3 open
		5 and 6 open
Switch actuated:	Continuity	2 and 1 open
		5 and 4 open
	Continuity	2 and 3 closed
		5 and 6 closed

Pins 4 and 6 / 1 and 3 should never indicate continuity.

Result:

YES: Switch is in good condition.

NO: Replace the switch.

S14 - Fan Switch



Fan switch

LEGEND:

S14 Fan switch

Component Information

Component Information

Type:	Thermostat switch
Location:	In the roof on l.h. side.
Connector:	XS14 - Connector for Fan Switch S14
Harness:	W05 - Cab Wiring Harness
Specifications and Details:	See component check below:
Function:	Switches the intensity of the fan.

Component Check

Make the following resistance and/or current draw tests:

(1) S14 - Fan Switch

Action:

→NOTE:

The switch must be electrically removed from the circuit when performing continuity tests.

The following truth table defines the operation of the fan switch.

Switch positions and pins on the fan switch

Switch Position:	Switch pins				
	B	L	M	H	C
OFF					
1st stage	X	X			X
2nd stage	X		X		X
3rd stage	X			X	X

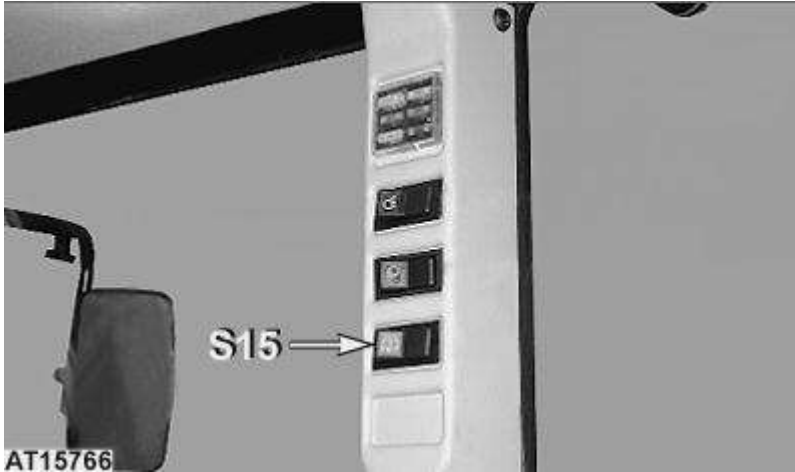
For extended checks, see also [SE10A - Fan Motor M07, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The switch is in good condition.

NO:Replace switch.

S15 - Wiper and Washer System Switch



Wiper and washer system switch

LEGEND:

S15 Wiper and washer system switch

Component Information

Component Information

Type:	Switch
Location:	In the post on the r.h. side
Connector:	XS15 - 10-Pin Connector for Switch S15 of Windshield Wiper and Pump of Washer System
Harness:	W05 - Cab Wiring Harness
Specifications and Details:	See component check below:

Component Check

(1) S15 - Wiper and washer system switch

Action:

→NOTE:

The switch must be electrically removed from the circuit when performing continuity tests.

The following truth table defines the operation of the wiper and washer system switch.

Switch positions and pins on the wiper and washer system switch

Switch position	Switch pins			
	1	2	3	4
OFF				
ON	X	X		X
Wash		X	X	

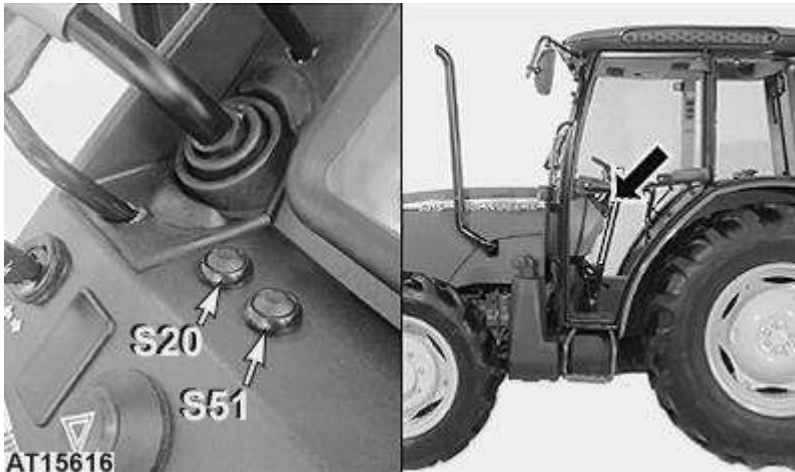
For extended checks, see also [SE11 - Wiper and Washer System, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The switch is in good condition.

NO:Replace switch.

S20 - Calibration Switch of Digital Instrument



S20 - Calibration switch of digital instrument

LEGEND:

- S20 Calibration switch of digital instrument
- S51 Calibration switch of digital instrument (EHM or EHM II)

Component Information

Component Information

- Type:** Switch
- Location:** On the instrument panel
- Connector:** [XS20 - 2-Pin Connector for Calibration Switch S20 of Digital Instrument](#)
- Harness:** [W02 - Main Wiring Harness](#)
- Specifications and Details:** See component check below:

Component Check

(1) S20 - Calibration Switch of Digital Instrument

Action:

→NOTE:

Unplug the switch from the wiring harness.

Use a [JT05791A](#) multimeter to measure for continuity between pins 1 and 2 on the switch:

The switch consists of a changeover contact. When actuated, the switch must change over.

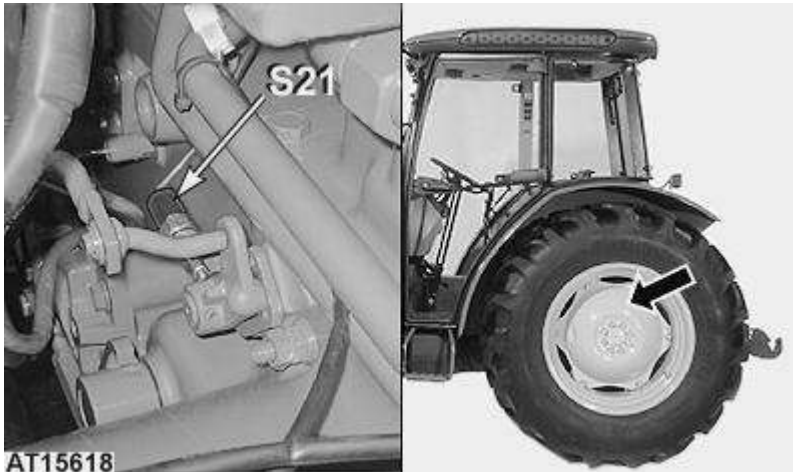
Item	Measurement	Specification
S20 - Calibration Switch of Digital Instrument		
Switch not actuated:	Continuity	1 and 2 open
Switch actuated:	Continuity	1 and 2 closed

Result:

YES:Switch is in good condition.

NO:Replace the switch.

S21 - PTO Mode Switch



S21 - PTO mode switch

LEGEND:

S21 PTO mode switch

Component Information

Component Information

Type:	Switch
Location:	L.h. side near the parking brake
Connector:	XS21 - 2-Pin Connector for PTO Mode Switch S21
Harness:	W02 - Main Wiring Harness
Specifications and Details:	See component check below:
Function:	Sends the selected PTO speed to the instrument (axle-driven or engine-driven)

Component Check

(1) S21 - PTO Mode Switch

Action:

Use a [JT05791A](#) multimeter to measure for continuity between pins A and B on the switch:

The switch consists of a changeover contact. When actuated, the switch must change over.

Item	Measurement	Specification
S21 - PTO Mode Switch		
Switch not actuated:	Continuity	A and B closed
Switch actuated:	Continuity	A and B open

For extended checks, see also [SE16B - PTO Speed System, Digital Version, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:Switch is in good condition.

NO:Replace the switch.

S22 - Differential Lock Switch



Differential lock switch

LEGEND:

S22 Differential lock switch

Component Information

Component Information

Type:	Switch
Location:	On the molding r.h.
Connector:	XS22 - 10-Pin Connector for Differential Lock Switch S22
Harness:	W03 - 24/12-Speed Transmission Wiring Harness
Specifications and Details:	See component check below:

Component check

(1) S22 - Differential Lock Switch

Action:

→NOTE:

Unplug the differential lock switch from the wiring harness.

Use the [JT05791A](#) multimeter to check for continuity between pins 4, 5 and 6 of the switch:

The switch is open when not activated. When the switch is activated, it must close.

Item	Measurement	Specification
S22 - Differential Lock Switch		
Switch not activated:	Continuity	5 and 6 open 5 and 4 closed
Switch activated:	Continuity	5 and 6 closed 5 and 4 open

Pins 4 and 6 should never indicate continuity.

For extended checks, see also [SE16C - Differential Lock, Functional Schematic and Theory of Operation](#) or [SE26 - Differential Lock \(EHM\), Functional Schematic and Theory of Operation](#) in this Section.

Result:

YES:Switch is OK.

NO:Replace the switch.

S23 - Reversal Switch for Allocation (Flow Divider Valve)



Reversal switch for allocation (flow divider valve)

LEGEND:

S23 Reversal switch for allocation (flow divider valve)

Component Information

Component Information

Type:	Switch
Location:	On the molding r.h.
Connector:	XS23 - 10-Pin Connector for Reversal Switch for Allocation S23 (Flow Divider Valve)
Harness:	W02 - Main Wiring Harness
Specifications and Details:	See component check below:

Component check

(1) S23 - Reversal Switch for Allocation (Flow Divider Valve)

Action:

→NOTE:

Unplug the reversal switch from the wiring harness.

Use the [JT05791A](#) multimeter to check for continuity between pins 4, 5 and 6 of the switch:

The switch is open when not activated. When the switch is activated, it must close.

Item	Measurement	Specification
S23 - Reversal Switch for Allocation (Flow Divider Valve)		
Switch not activated:	Continuity	2 and 3 open 5 and 6 open
Switch activated:	Continuity	2 and 3 closed 5 and 6 closed

For extended checks, see also [SE21 - Flow Divider Valve, Functional Schematic and Theory of Operation](#) in this Section.

Result:

YES:Switch is OK.

NO:Replace the switch.

S36 - Beacon Light Switch



Beacon light switch

LEGEND:

S36 Beacon light switch

Component Information

Component Information

Type:	Switch
Location:	On the molding l.h.
Connector:	XS36 - 10-Pin Connector for Beacon Light Switch S36
Harness:	W02 - Main Wiring Harness
Specifications and Details:	See component check below:

Component Check

(1) S36 - Beacon Light Switch

Action:

→NOTE:

Unplug the beacon light switch from the wiring harness.

Use a [JT05791A](#) multimeter to measure continuity between pins 5 and 6 of the switch.

When actuated, the switch must close.

Item	Measurement	Specification
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S36 - Beacon Light Switch

Switch OFF:	Continuity	5 and 6 open
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Switch ON:	Continuity	5 and 6 closed
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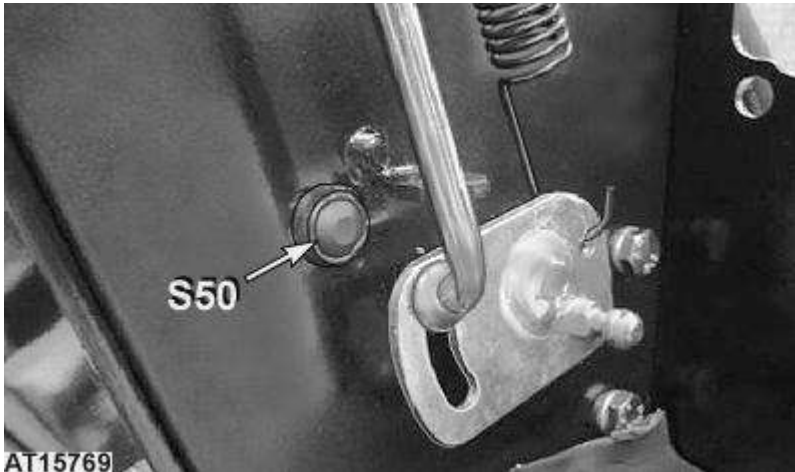
For extended checks, see also [SE13 - Beacon Light E27, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The switch is in good condition.

NO:Replace the switch.

S50 - Calibration Switch (EHM or EHM II)



Calibration switch (EHM or EHM II)

LEGEND:

S50 Calibration switch (EHM or EHM II)

Component Information

Component Information

- Type:** Switch
- Location:** L.h. side of the brake pedal
- Connector:** [XS50 - 2-Pin Connector for Calibration Switch S50 \(EHM or EHM II\)](#)
- Harness:** [W03 - 24/12-Speed Transmission Wiring Harness](#)
or
[W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- Specifications and Details:** See component check below:

Component Check

(1) S50 - Calibration Switch (EHM or EHM II)

Action:

→NOTE:

Unplug the switch from the wiring harness.

Use a [JT05791A](#) multimeter to measure for continuity between pins 1 and 2 on the switch:

The switch consists of a changeover contact. When actuated, the switch must change over.

Item	Measurement	Specification
S50 - Calibration Switch (EHM or EHM II)		
Switch not actuated:	Continuity	1 and 2 open
Switch actuated:	Continuity	1 and 2 closed

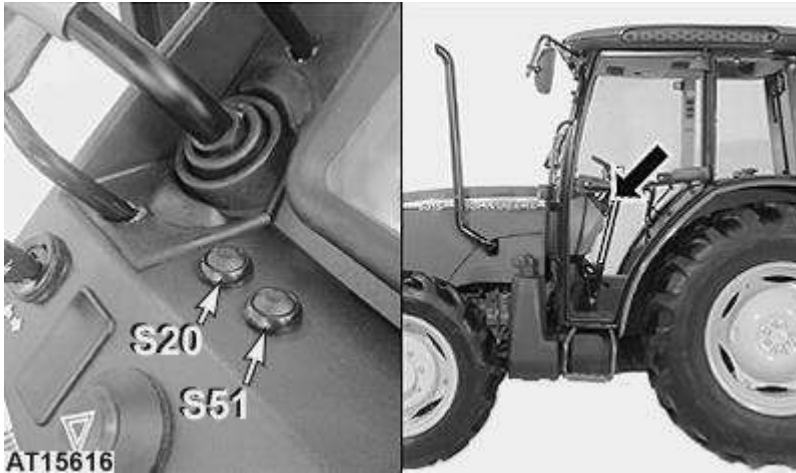
For extended checks, see also [SE26A - Transmission Oil Temperature Sensor and Calibration Switch \(EHM\), Diagnostic Schematic and Circuit Test](#) or [SE26B - Transmission Oil Temperature Sensor and Calibration Switch \(EHM II\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:Switch is in good condition.

NO:Replace the switch.

S51 - Calibration Switch of Digital Instrument (EHM or EHM II)



Calibration switch of digital instrument (EHM or EHM II)

LEGEND:

- S20 Calibration switch of digital instrument
- S51 Calibration switch of digital instrument (EHM or EHM II)

Component Information

Component Information

- Type:** Switch
- Location:** On the instrument panel
- Connector:** [XS51 - 2-Pin Connector for Calibration Switch S51 of Digital Instrument \(EHM or EHM II\)](#)
- Harness:** [W03 - 24/12-Speed Transmission Wiring Harness](#)
or
[W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- Specifications and Details:** See component check below:

Component Check

(1) S51 - Calibration Switch of Digital Instrument (EHM or EHM II)

Action:

→NOTE:

Unplug the switch from the wiring harness.

Use a [JT05791A](#) multimeter to measure for continuity between pins 1 and 2 on the switch:

The switch consists of a changeover contact. When actuated, the switch must change over.

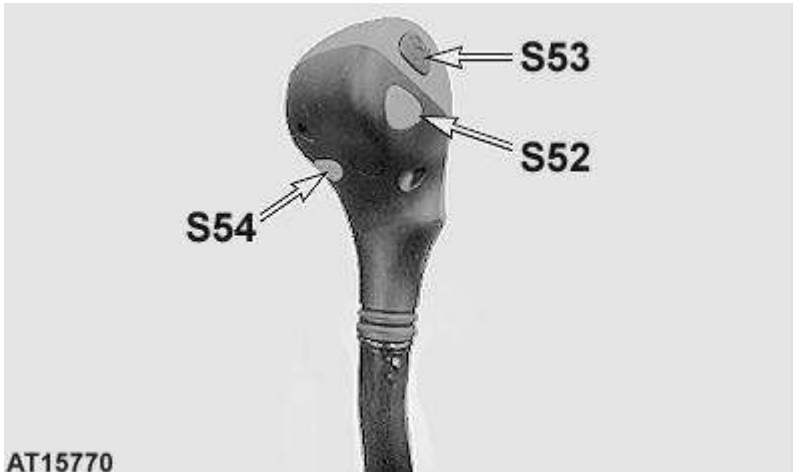
Item	Measurement	Specification
S51 - Calibration Switch of Digital Instrument (EHM or EHM II)		
Switch not actuated:	Continuity	1 and 2 open
Switch actuated:	Continuity	1 and 2 closed

Result:

YES:Switch is in good condition.

NO:Replace the switch.

S52 - Hi-Lo Switch (low)



Hi-Lo switches

LEGEND:

- S52 Hi-Lo switch (low)
- S53 Hi-Lo switch (high)
- S54 Declutch switch on range shift lever (EHM or EHM II)

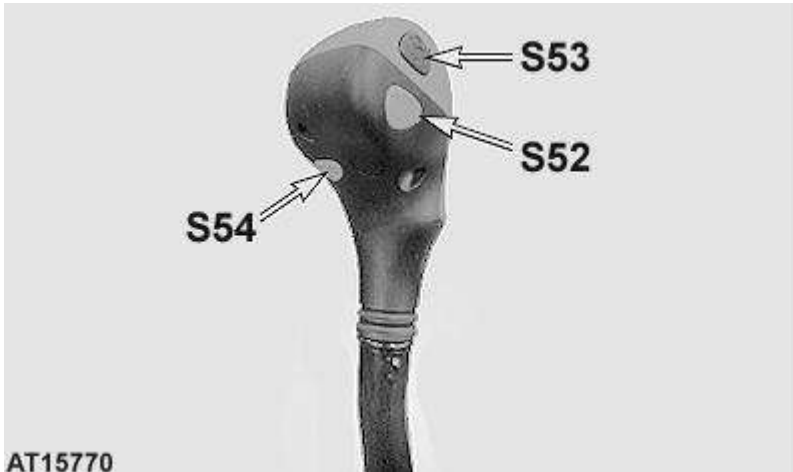
Component Information

Component Information

- Type:** Switch
- Location:** On the range shift lever
- Connector:** [X23 - 3-Pin Connector for Hi-Lo Switches \(S53 and S52\)](#)
- Harness:** [W02 - Main Wiring Harness](#)

For extended checks, see also [SE27 - Electro-Hydraulic Hi-Lo, Diagnostic Schematic and Circuit Test](#) in this Section.

S53 - Hi-Lo Switch (high)



Hi-Lo switches

LEGEND:

- S52 Hi-Lo switch (low)
- S53 Hi-Lo switch (high)
- S54 Declutch switch on range shift lever (EHM or EHM II)

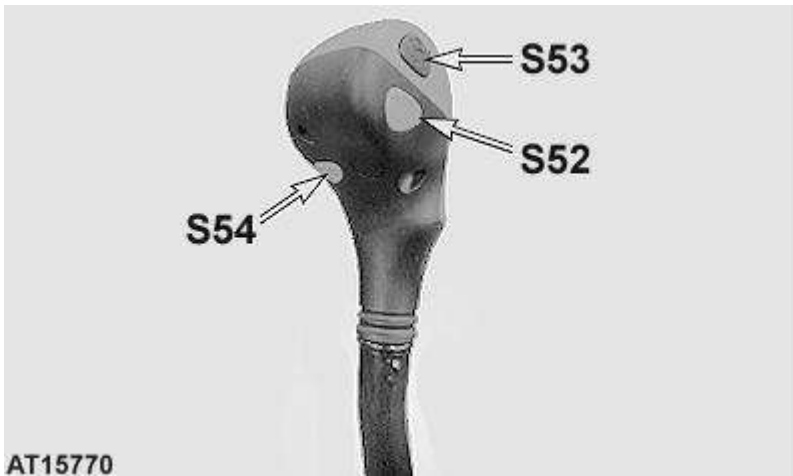
Component Information

Component Information

- Type:** Switch
- Location:** On the range shift lever
- Connector:** [X23 - 3-Pin Connector for Hi-Lo Switches \(S53 and S52\)](#)
- Harness:** [W02 - Main Wiring Harness](#)

For extended checks, see also [SE27 - Electro-Hydraulic Hi-Lo, Diagnostic Schematic and Circuit Test](#) in this Section.

S54 - Declutch Switch on Range Shift Lever (EHM or EHM II)



Declutch switch on range shift lever

LEGEND:

- S52 Hi-Lo switch (low)
- S53 Hi-Lo switch (high)
- S54 Declutch switch on range shift lever (EHM or EHM II)

Component Information

Component Information

- Type:** Switch
- Location:** On the range shift lever
- Connector:** [XS54 - 1-Pin Connector for Declutch Switch S54 \(EHM or EHM II\)](#)
- Harness:** [W03 - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
or
[W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)

For extended checks, see also [SE26A - Declutch Switch on Range Shift Lever \(EHM\), Diagnostic Schematic and Circuit Test](#) or [SE26B - Declutch Switch on Range Shift Lever \(EHM II\), Diagnostic Schematic and Circuit Test](#) in this Section.

S61 - Rear Work Light with Switch



Rear work light with switch

LEGEND:

S61 Rear work light with switch

Component Information

Component Information

Type: Switch

Location: Next to the ROPS on l.h.

Connector: [XS61 - 2-Pin Connector for Rear Work Light with Switch S61](#)

Harness: [W02 - Main Wiring Harness](#)

For extended checks, see also [SE07A - Rear Work Light with Switch S61, Diagnostic Schematic and Circuit Test](#) in this Section.

S63 - Front-Wheel Drive Switch



Front-wheel drive switch

LEGEND:

S63 Front-wheel drive switch

Component Information

Component Information

Type:	Switch
Location:	On the molding r.h.
Connector:	XS63 - 10-Pin Connector for Front-Wheel Drive Switch S63
Harness:	W02 - Main Wiring Harness
Specifications and Details:	See component check below:

Component check

(1) S63 - Front-Wheel Drive Switch

Action:

→NOTE:

Unplug the switch from the wiring harness.

Use the [JT05791A](#) multimeter to check for continuity between pins 1, 2 and 3 and between pins 4, 5 and 6 of the switch:

The switch is open when not activated. When the switch is activated, it must close.

Item	Measurement	Specification
S63 - Front-Wheel Drive Switch		
Switch not activated:	Continuity	2 and 1 closed
		2 and 3 open
		5 and 4 closed
		5 and 6 open
Switch activated:	Continuity	2 and 1 open
		2 and 3 closed
		5 and 4 open
		5 and 6 closed

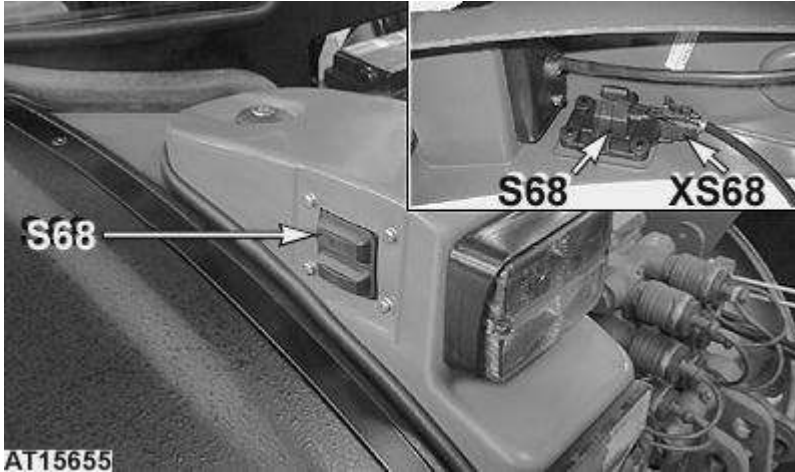
For extended checks, see also [SE16C - Stop Lights, Front-Wheel Drive Circuit and Parking Brake Circuit, Diagnostic Schematic and Circuit Test](#) or [SE26 - Electro-Hydraulic Management \(EHM\) \(Summary of References\)](#) in this Section.

Result:

YES:Switch is OK.

NO:Replace the switch.

S68 - Hitch Remote Control Switch (EHS)



Hitch remote control switch (EHS)

LEGEND:

S68 Hitch remote control switch (EHS)

XS68 6-pin connector for hitch remote control switch S68 (EHS)

Component Information

Component Information

Type: Switch

Location: On the rear fender l.h.

Connector: [XS68 - 6-Pin Connector for Hitch Remote Control Switch S68 \(EHS\)](#)

Harness: [W11 - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)

Function: Sends the command to the EHS control panel to raise or to lower the hitch as long as the switch is pressed.

Component Check

(1) Hitch Remote Control Switch (EHS)

Action:

Use a [JT05791A](#) multimeter to measure for continuity between the inner pins and the outer pins on the switch:

The switch consists of a changeover contact. When actuated, the switch must change over.

Item	Measurement	Specification
S68 - Hitch Remote Control Switch (EHS)		
Switch not actuated:	No continuity	Between pins A and C Between pins D and F
Switch actuated (raise position):	Continuity	Between pins D and F
Switch actuated (lower position):	Continuity	Between pins A and C

For extended checks, see also [SE15A - Hitch Remote Control Switch S68 \(EHS\), Diagnostic Schematic and Circuit Test](#) or [SE15A - Electronic Hitch Sensing \(EHS\) \(Summary of References\)](#) in this Section.

Result:

YES:Switch is in good condition.

NO:Replace the switch.

S68 II - Hitch Remote Control Switch (EHS II)



Hitch remote control switch (EHS II)

LEGEND:

S68 II Hitch remote control switch (EHS II)

XS68 II 6-pin connector for hitch remote control switch S68 II (EHS II)

Component Information

Component Information

Type: Switch

Location: On the rear fender l.h.

Connector: [XS68 II - 6-Pin Connector for Hitch Remote Control Switch S68 II \(EHS II\)](#)

Harness: [W11 II - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Function: Sends the command to the EHS II control panel to raise or to lower the hitch as long as the switch is pressed.

Component Check

(1) S68 II - Hitch Remote Control Switch (EHS II)

Action:

Use a [JT05791A](#) multimeter to measure for continuity between the inner pins and the outer pins on the switch:

The switch consists of a changeover contact. When actuated, the switch must change over.

Item	Measurement	Specification
S68 II - Hitch Remote Control Switch (EHS II)		
Switch not actuated:	No continuity	Between pins A and C Between pins D and F
Switch actuated (raise position):	Continuity	Between pins D and F
Switch actuated (lower position):	Continuity	Between pins A and C

For extended checks, see also [SE15B - Hitch Remote Control Switch S68 II \(EHS II\), Diagnostic Schematic and Circuit Test](#) or [SE15B - Electronic Hitch Sensing \(EHS II\) \(Summary of References\)](#) in this Section.

Result:

YES:Switch is in good condition.

NO:Replace the switch.

S72 - Clutch Pedal Switch (EHM or EHM II)



S72 - Clutch pedal switch (EHM or EHM II)

LEGEND:

S72 Clutch pedal switch (EHM or EHM II)

XS72 4/1-pin connectors for clutch pedal switch S72 (EHM or EHM II)

Component Information

Component Information

Type:	Switch
Location:	Near the clutch pedal
Connector:	XS72 - 4/1-Pin Connectors for Clutch Pedal Switch S72 (EHM or EHM II)
Harness:	For extended checks, see also SE26A - Electro-Hydraulic Management (EHM) (Summary of References) or SE26B - Electro-Hydraulic Management (EHM II) (Summary of References) in this Section.
Specifications and Details:	See component check below:
Function:	Input to EHM or EHM II control panel if the clutch pedal is completely pressed.

Component Check

(1) S72 - Clutch Pedal Switch (EHM or EHM II)

Action:

Use a [JT05791A](#) multimeter to measure for continuity between the inner pins and the outer pins on the switch:

The switch consists of a changeover contact. When actuated, the switch must change over.

Item	Measurement	Specification
S72 - Clutch Pedal Switch (EHM or EHM II)		
Switch not actuated:	Continuity	inner pins closed outer pins open
Switch actuated:	Continuity	inner pins open outer pins closed

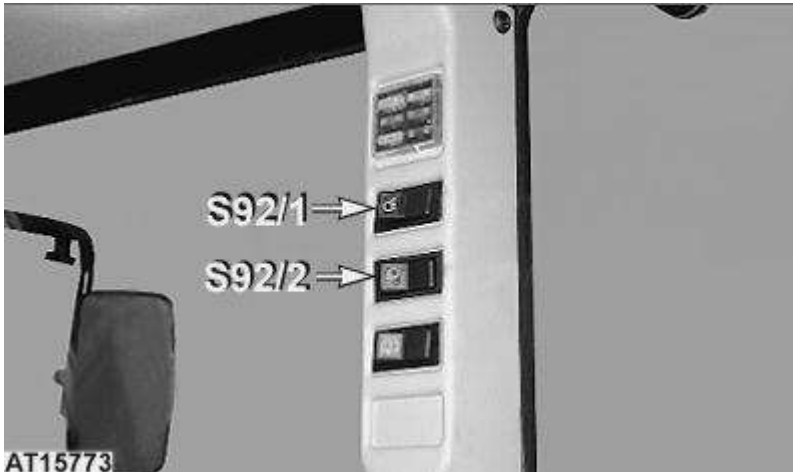
For extended checks, see also [SE26A - Clutch Pedal Switch \(EHM\), Diagnostic Schematic and Circuit Test](#) or [SE26B - Clutch Pedal Switch \(EHM II\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:Switch is in good condition.

NO:Replace the switch.

S92/1 - Front Work Light Switch



Work light switches

LEGEND:

- S92/1 Front work light switch
- S92/2 Rear work light switch

Component Information

Component Information

- Type:** Switch
- Location:** In the post on the r.h. side
- Connector:** [XS92/1 - 10-pin Connector for Front Work Light Switch S92/1](#)
- Harness:** [W05 - Cab Wiring Harness](#)
- Specifications and Details:** See component check below:

Component check

(1) S92/1 - Front Work Light Switch

Action:

→NOTE:

Unplug the switch from the wiring harness.

Use the [JT05791A](#) multimeter to check for continuity between pins 1, 2 and 3 and between pins 4, 5 and 6 of the switch:

The switch is open when not activated. When the switch is activated, it must close.

Item	Measurement	Specification
S92/1 - Front Work Light Switch		
Switch not activated:	Continuity	2 and 1 closed
		2 and 3 open
		5 and 4 closed
		5 and 6 open
Switch activated:	Continuity	2 and 1 open
		2 and 3 closed
		5 and 4 open
		5 and 6 closed

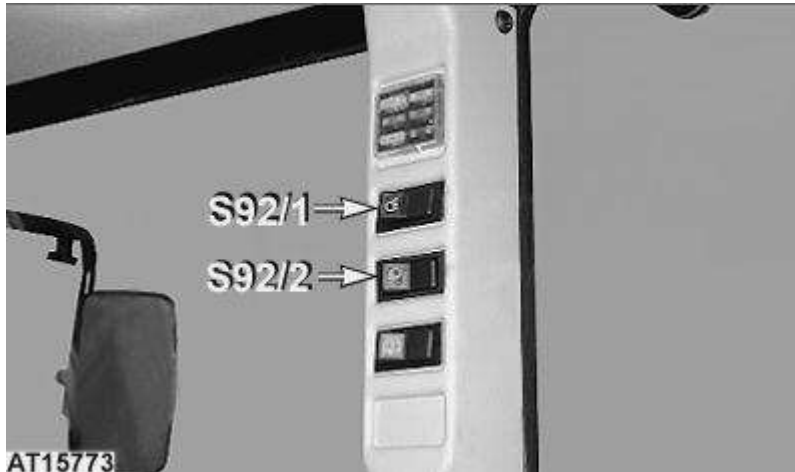
For extended checks, see also [SE07B - Front Work Lights E18 \(Cab Only\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:Switch is OK.

NO:Replace the switch.

S92/2 - Rear Work Light Switch



Work light switches

LEGEND:

- S92/1 Front work light switch
- S92/2 Rear work light switch

Component Information

Component Information

- Type:** Switch
- Location:** In the post on the r.h. side
- Connector:** [XS92/2 - 10-Pin Connector for Rear Work Light Switch S92/2](#)
- Harness:** [W05 - Cab Wiring Harness](#)
- Specifications and Details:** See component check below:

Component check

(1) S92/2 - Rear Work Light Switch

Action:

→NOTE:

Unplug the switch from the wiring harness.

Use the [JT05791A](#) multimeter to check for continuity between pins 1, 2 and 3 and between pins 4, 5 and 6 of the switch:

The switch is open when not activated. When the switch is activated, it must close.

Item	Measurement	Specification
S92/2 - Rear Work Light Switch		
Switch not activated:	Continuity	2 and 1 closed
		2 and 3 open
		5 and 4 closed
		5 and 6 open
Switch activated:	Continuity	2 and 1 open
		2 and 3 closed
		5 and 4 open
		5 and 6 closed

For extended checks, see also [SE07B - Rear Work Lights E11 \(Cab Only\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:Switch is OK.

NO:Replace the switch.

S93 - Heating and Air-Conditioning Switch



S93 - Heating and air-conditioning switch

LEGEND:

S93 Heating and air-conditioning switch

Component Information

Component Information

- Type:** Thermostat switch
- Location:** In the roof on r.h. side.
- Connector:** [XS93 - Connector for Heating and Air-Conditioning Switch S93](#)
- Harness:** [W05 - Cab Wiring Harness](#)
- Specifications and Details:** See component check below:
- Function:** Switches the air-conditioning clutch in relation to the temperature of the condenser.

Component Check

(1) S93 - Heating and Air-Conditioning Switch

Action:

→NOTE:

Unplug the thermostat switch from the wiring harness.

Use a [JT05791A](#) multimeter to measure for continuity between pins A and B on the thermostat switch:

The switch point is variable, depending on whether the setting is WARM or COLD.

Item	Measurement	Specification
S93 - Heating and Air-Conditioning Switch		
Switch closed:	Temperature	from -2°C (28°F) to +18°C (64°F)
Switch open:	Temperature	below +4°C (39°F)

The temperature reading is the temperature of the sensor; this may deviate by several degrees in either direction.

Result:

YES:Switch is in good condition.

NO:Replace switch.

(2) Fan Switch S14

Action:

→NOTE:

The switch must be electrically removed from the circuit when performing continuity tests.

The following truth table defines the operation of the fan switch.

Switch positions and pins on the fan switch

Switch Position:	Switch pins				
	B	1	2	3	4
OFF					
1st stage	X	X			
2nd stage	X	X	X		
3rd stage	X	X	X	X	
4th stage	X	X	X	X	X

For extended checks, see also [SE10B - Air-Conditioning System, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The switch is in good condition.

NO:Replace switch.

S106 - Hazard Warning Light Switch



S106 - hazard warning light switch

LEGEND:

S106 Hazard warning light switch

Component Information

Component Information

Type:	Switch
Location:	Instrument panel
Connector:	XS106 - 7-Pin Connector for Hazard Warning Light Switch S106
Harness:	W01 - Engine Wiring Harness
Specifications and Details:	See component check below:
Function:	Switches the hazard warning lights

Component Check

(1) S106 - Hazard Warning Light Switch

Action:

→NOTE:

Unplug the hazard warning light switch from the wiring harness.

Use a [JT05791A](#) multimeter to measure for continuity as shown below:

The switch consists of two changeover contacts. When actuated, the contacts must change over. The indicator light for the hazard warning lights is integrated in the switch.

Item	Measurement	Specification
S106 - Hazard Warning Light Switch		
Switch OFF:	Continuity	15 and 49 closed
	Continuity	15 and 30 open
	Continuity	15 and 49A open
Switch ON:	Continuity	15 and 49 open
	Continuity	30 and 49A open
	Continuity	30 and 49 closed

Pins 49 and 30 and 49 and 15 should never indicate continuity. If pins L, R and 49A do not indicate continuity, the indicator light in the switch is defective.

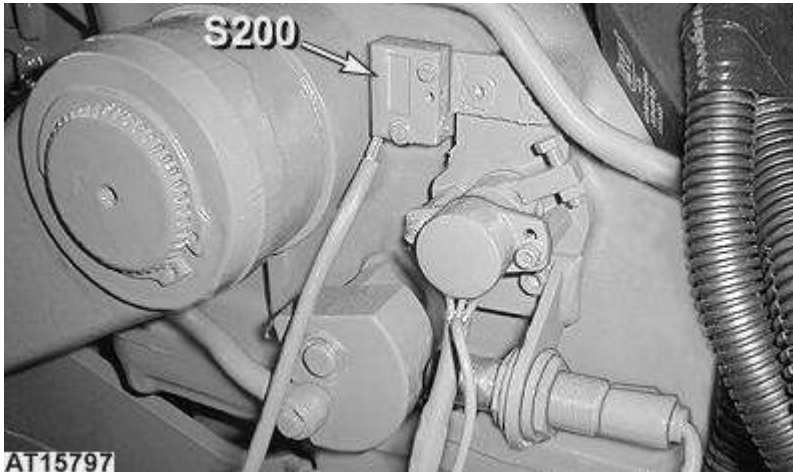
For extended checks, see also [SE16A - Hazard Warning Lights, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:Switch is in good condition.

NO:Replace the switch.

S200 - Raise Limiting Switch (EHS)



Raise limiting switch (EHS)

LEGEND:

S200 Raise limiting switch (EHS)

Component Information

Component Information

Type: Switch

Location: Near the hitch r.h.

Connector: [XS200 - 2-Pin Connector for Raise Limiting Switch S200 \(EHS\)](#)

Harness: [W11 - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)

Function: Stop the raise function if the highest position is reached.

For extended checks, see also [SE15A - Raise Limiting Switch S200 \(EHS\), Diagnostic Schematic and Circuit Test](#) or [SE15A - Electronic Hitch Sensing \(EHS\) \(Summary of References\)](#) in this Section.

S200 II - Raise Limiting Switch (EHS II)



Raise limiting switch (EHS II)

LEGEND:

S200 II Raise limiting switch (EHS II)

Component Information

Component Information

Type: Switch

Location: Near the hitch r.h.

Connector: [XS200 II - 2-Pin Connector for Raise Limiting Switch S200 II \(EHS II\)](#)

Harness: [W11 II - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Function: Stop the raise function if the highest position is reached.

For extended checks, see also [SE15B - Raise Limiting Switch S200 II \(EHS II\), Diagnostic Schematic and Circuit Test](#) or [SE15B - Electronic Hitch Sensing \(EHS II\) \(Summary of References\)](#) in this Section.

S201 - Raise/Lower Switch (EHS)



Raise/lower switch S201 (EHS)

LEGEND:

S201 Raise/lower switch (EHS)

Component Information

Component Information

Type: Switch

Location: On the r.h. molding

Connector: [XS201 - 3/1-Pin Connector for Raise/Lower Switch S201 \(EHS\)](#)

Harness: [W11 - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)

Function: Sends the command to the EHS control panel to raise or to lower the hitch as long as the switch is pressed.

For extended checks, see also [SE15 - Electronic Hitch Sensing \(EHS\), Functional Schematic](#) or [SE15 - Electronic Hitch Sensing \(EHS II\), Functional Schematic](#) in this Section.

S201 II - Raise/Lower Switch (EHS II)



Raise/lower switch S201 II (EHS II)

LEGEND:

S201 II Raise/lower switch (EHS II)

Component Information

Component Information

Type: Switch

Location: On the r.h. molding

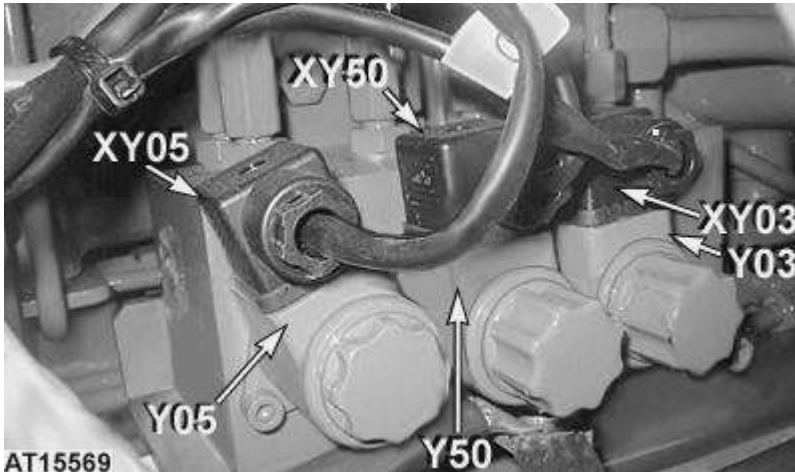
Connector: [XS201 II - 3-Pin Connector for Raise/Lower Switch S201 II \(EHS II\)](#)

Harness: [W11 II - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Function: Sends the command to the EHS II control panel to raise or to lower the hitch as long as the switch is pressed.

For extended checks, see also [SE15A - Raise/Lower Switch S201 \(EHS\), Diagnostic Schematic and Circuit Test](#) or [SE15A - Electronic Hitch Sensing \(EHS\) \(Summary of References\)](#) in this Section.

Y03 - Front-Wheel Drive Solenoid Valve



Electro-hydraulic Hi-Lo solenoid valve Y50

LEGEND:

- XY03 4-pin connector for front-wheel drive solenoid valve Y03
- XY05 4-pin connector for differential lock solenoid valve Y05
- XY50 4-pin connector for electro-hydraulic Hi-Lo solenoid valve Y50
- Y03 Front-wheel drive solenoid valve
- Y05 Differential lock solenoid valve
- Y50 Electro-hydraulic Hi-Lo solenoid valve (24/24-speed transmission only)

Component Information

Component Information

- Type:** Solenoid valve
- Location:** Behind the r.h. step
- Connector:** [XY03 - 4-Pin Connector for Front-Wheel Drive Solenoid Valve Y03](#)
- Harness:** [W02 - Main Wiring Harness](#)
- Specifications and Details:** See component check below:
- Function:** Engages or disengages the front-wheel drive

Component Check

(1) Solenoid valve

Action:

→NOTE:

Unplug the relevant solenoid valve from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B on the solenoid valve:

Item	Measurement	Specification
Solenoid valve		
Solenoid valve:	Resistance	approx. 8 ohms
Current draw:	Current	below 1.5 amp

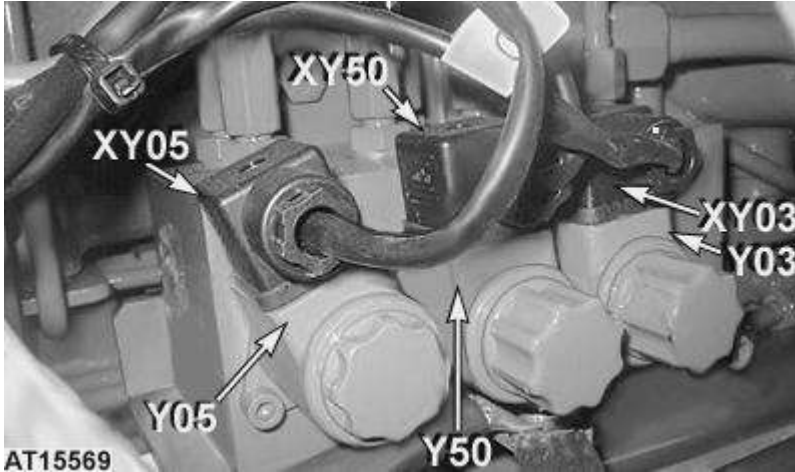
For extended checks, see also [SE26 - Electro-Hydraulic Management \(EHM\) \(Summary of References\)](#) or [SE16C - Stop Lights, Front-Wheel Drive Circuit and Parking Brake Circuit, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The solenoid valve is in good condition.

NO:Replace the solenoid valve.

Y05 - Differential Lock Solenoid Valve



Electro-hydraulic Hi-Lo solenoid valve Y50

LEGEND:

- XY03 4-pin connector for front-wheel drive solenoid valve Y03
- XY05 4-pin connector for differential lock solenoid valve Y05
- XY50 4-pin connector for electro-hydraulic Hi-Lo solenoid valve Y50
- Y03 Front-wheel drive solenoid valve
- Y05 Differential lock solenoid valve
- Y50 Electro-hydraulic Hi-Lo solenoid valve (24/24-speed transmission only)

Component Information

Component Information

- Type:** Solenoid valve
- Location:** Behind the r.h. side step
- Connector:** [XY05 - 4-Pin Connector for Differential Lock Solenoid Valve Y05](#)
- Harness:** [W02 - Main Wiring Harness](#)
- Specifications and Details:** See component check below:
- Function:** Engages or disengages the differential lock

Component Check

(1) Solenoid valve

Action:

→NOTE:

Unplug the relevant solenoid valve from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B on the solenoid valve:

Item	Measurement	Specification
Solenoid valve		
Solenoid valve:	Resistance	approx. 8 ohms
Current draw:	Current	below 1.5 amp

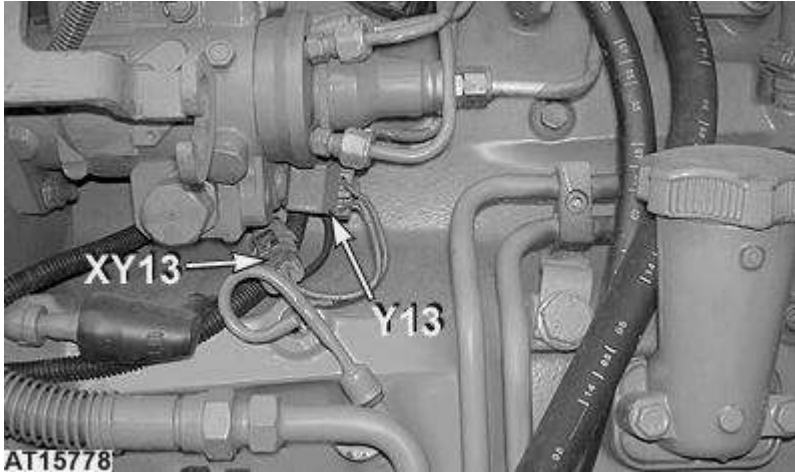
For extended checks, see also [SE26 - Electro-Hydraulic Management \(EHM\) \(Summary of References\)](#) in this Section.

Result:

YES:The solenoid valve is in good condition.

NO:Replace the solenoid valve.

Y13 - Fuel Shut-Off Solenoid Valve



Fuel shut-off solenoid valve

LEGEND:

- XY13 2-pin connector for fuel shut-off solenoid valve Y13
- Y13 Fuel shut-off solenoid valve

Component Information

Component Information

- Type:** Solenoid valve
- Location:** R.h. side near the transmission oil filter
- Connector:** [XY13 - 2-Pin Connector for Fuel Shut-Off Solenoid Valve Y13](#)
- Harness:** [W01 - Engine Wiring Harness](#)
- Specifications and Details:** See component check below:

Component Check

Make the following resistance and/or current draw test:

(1) Fuel Shut-Off Solenoid Valve Y13

Action:

→NOTE:

Unplug the fuel shut-off solenoid valve from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pin A on the valve and the valve housing:

Item	Measurement	Specification
Fuel Shut-Off Solenoid Valve Y13		
Solenoid valve:	Resistance	approx. 30 ohms
Current draw:	Current	approx. 0.4 amps

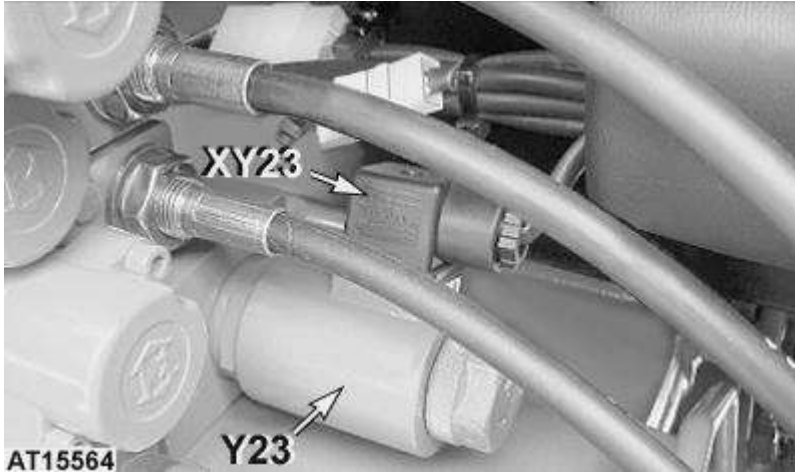
For extended checks, see also [SE26 - Shut-Off System \(EHM\), Functional Schematic and Theory of Operation](#) in this Section.

Result:

YES: Shut-off valve is in good condition.

NO: Replace the shut-off valve.

Y23 - Flow Divider Solenoid Valve



Flow divider solenoid valve

LEGEND:

- XY23 4-pin connector for flow divider solenoid valve Y23
- Y23 Flow divider solenoid valve

Component Information

Component Information

- Type:** Solenoid valve
- Location:** Under the SCVs
- Connector:** [XY23 - 4-Pin Connector for Flow Divider Solenoid Valve Y23](#)
- Harness:** [W02 - Main Wiring Harness](#)
- Specifications and Details:** See component check below:
- Function:** Switches the priority oil flow between the rockshaft and to the SCVs.

Component Check

(1) Solenoid valve

Action:

→NOTE:

Unplug the relevant solenoid valve from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B on the solenoid valve:

Item	Measurement	Specification
Solenoid valve		
Solenoid valve:	Resistance	approx. 8 ohms
Current draw:	Current	below 1.5 amp

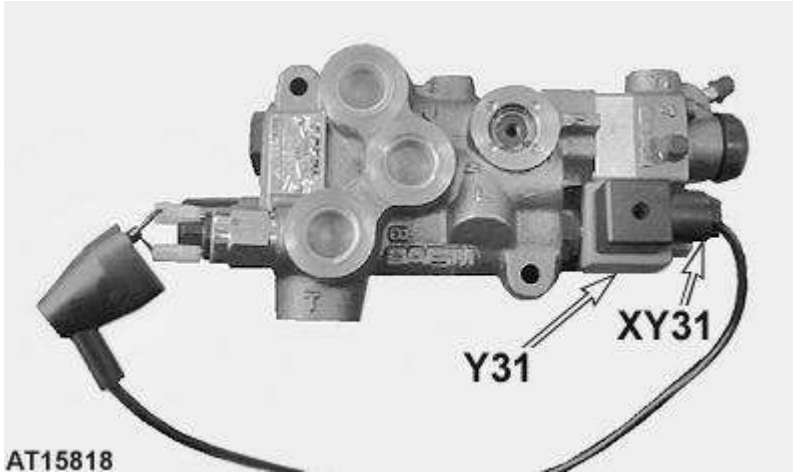
For extended checks, see also [SE21 - Flow Divider Valve, Functional Schematic and Theory of Operation](#) in this Section.

Result:

YES:The solenoid valve is in good condition.

NO:Replace the solenoid valve.

Y31 - Trailer Brake Solenoid Valve



Trailer brake solenoid valve

LEGEND:

- XY31 4-pin connector for trailer brake solenoid valve Y31
- Y31 Trailer brake solenoid valve

Component Information

Component Information

- Type:** Solenoid valve
- Location:** Next to the distributor block
- Connector:** [XY31 - 4-Pin Connector for Trailer Brake Solenoid Valve Y31](#)
- Harness:** [W13 - Trailer Brake Valve Wiring Harness](#)
- Specifications and Details:** See component check below:

Component Check

(1) Solenoid valve

Action:

→NOTE:

Unplug the relevant solenoid valve from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B on the solenoid valve:

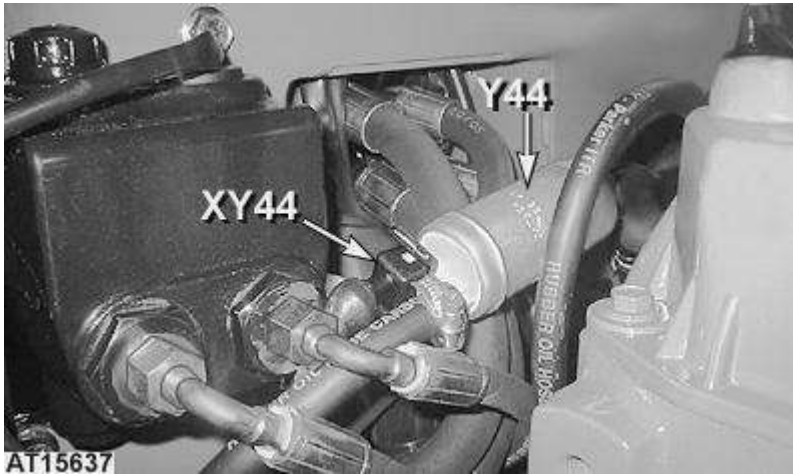
Item	Measurement	Specification
Solenoid valve		
Solenoid valve:	Resistance	approx. 8 ohms
Current draw:	Current	below 1.5 amp

Result:

YES:The solenoid valve is in good condition.

NO:Replace the solenoid valve.

Y44 - Fuel Transfer Pump



Fuel transfer pump

LEGEND:

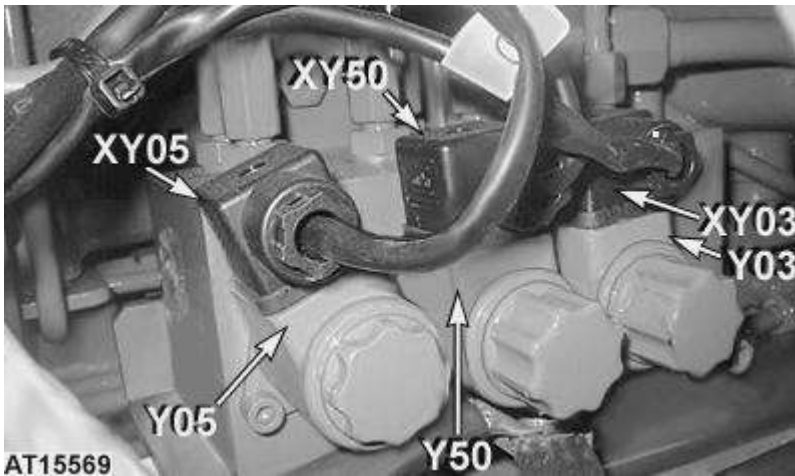
- XY44 2-pin connector for fuel transfer pump Y44
- Y44 Fuel transfer pump

Component Information

Component Information

- Type:** Fuel pump
- Location:** R.h. side of the engine
- Connector:** [XY44 - 2-Pin Connector for Fuel Transfer Pump Y44](#)
- Harness:** [W01 - Engine Wiring Harness](#)
- Function:** Transfers the fuel from fuel tank to the injection pump

Y50 - Electro-Hydraulic Hi-Lo Solenoid Valve (24/24-Speed Transmission only)



Electro-hydraulic Hi-Lo solenoid valve Y50

LEGEND:

- XY03 4-pin connector for front-wheel drive solenoid valve Y03
- XY05 4-pin connector for differential lock solenoid valve Y05
- XY50 4-pin connector for electro-hydraulic Hi-Lo solenoid valve Y50
- Y03 Front-wheel drive solenoid valve
- Y05 Differential lock solenoid valve
- Y50 Electro-hydraulic Hi-Lo solenoid valve (24/24-speed transmission only)

Component Information

Component Information

- Type:** Solenoid valve
- Location:** Behind the r.h. side step
- Connector:** [XY50 - 4-pin connector for electro-hydraulic Hi-Lo solenoid valve Y50](#)
- Harness:** [W02 - Main Wiring Harness](#)
- Specifications and Details:** See component check below:
- Function:** Switches the transmission speed gear to low or high position.

Component Check

(1) Solenoid valve

Action:

→NOTE:

Unplug the relevant solenoid valve from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B on the solenoid valve:

Item	Measurement	Specification
Solenoid valve		
Solenoid valve:	Resistance	approx. 8 ohms
Current draw:	Current	below 1.5 amp

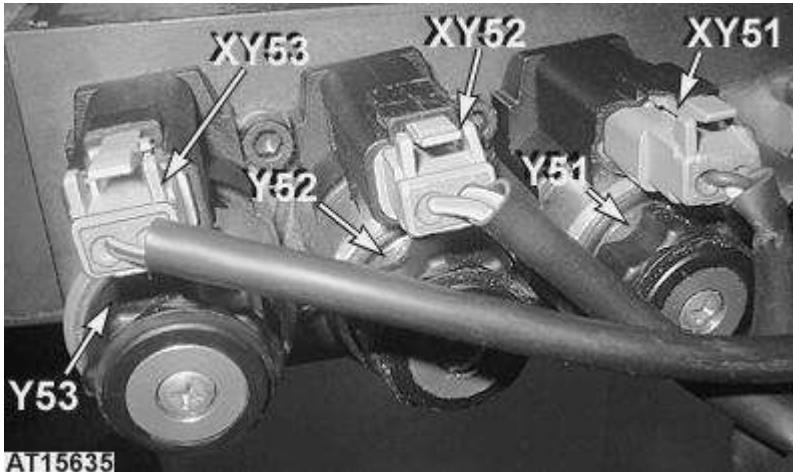
For extended checks, see also [SE27 - Electro-Hydraulic Hi-Lo, Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The solenoid valve is in good condition.

NO:Replace the solenoid valve.

Y51 - Reverse Clutch Solenoid Valve (EHM or EHM II)



2-pin connector for reverse clutch solenoid valve Y51 (EHM or EHM II)

LEGEND:

- XY51 2-pin connector for reverse clutch solenoid valve Y51 (EHM or EHM II)
- XY52 2-pin connector for forward low clutch solenoid valve Y52 (EHM or EHM II)
- XY53 2-pin connector for forward high clutch solenoid valve Y53 (EHM or EHM II)
- Y51 Reverse clutch solenoid valve (EHM or EHM II)
- Y52 Forward low clutch solenoid valve (EHM or EHM II)
- Y53 Forward high clutch solenoid valve (EHM or EHM II)

Component Information

Component Information

- Type:** Proportional solenoid valve
- Location:** Behind the r.h. side step
- Connector:** [XY51 - 2-Pin Connector for Reverse Clutch Solenoid Valve Y51 \(EHM or EHM II\)](#)
- Harness:** [W03 - 24/12-Speed Transmission Wiring Harness](#)
or
[W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- Specifications and Details:** See component check below:
- Function:** Switches the transmission gear to reverse position

Component Check

(1) Proportional valve

Action:

→NOTE:

Unplug the relevant solenoid valve from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B on the solenoid valve:

Item	Measurement	Specification
Proportional valve		
Solenoid valve:	Resistance	approx. 2.2 ohms
Current draw:	Current	below 2.1 amp

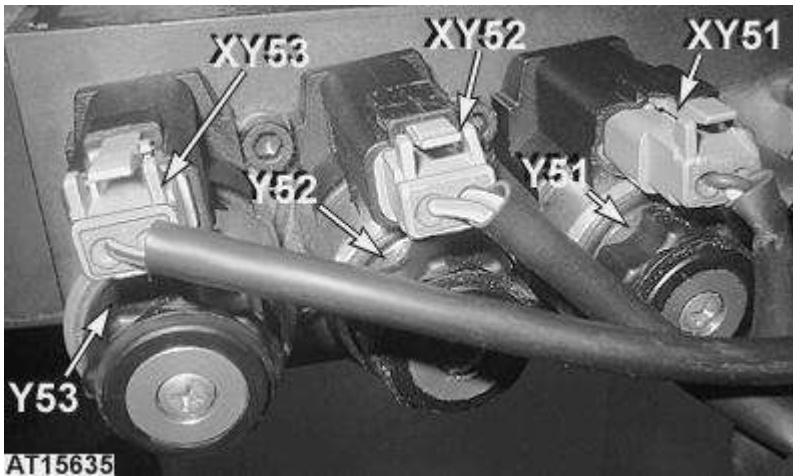
For extended checks, see also [SE26A - Reverse Clutch \(EHM\), Diagnostic Schematic and Circuit Test](#) or [SE26B - Reverse Clutch \(EHM II\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The solenoid valve is in good condition.

NO:Replace the solenoid valve.

Y52 - Forward Low Clutch Solenoid Valve (EHM or EHM II)



2-pin connector for forward low clutch solenoid valve Y52 (EHM or EHM II)

LEGEND:

- XY51 2-pin connector for reverse clutch solenoid valve Y51 (EHM or EHM II)
- XY52 2-pin connector for forward low clutch solenoid valve Y52 (EHM or EHM II)
- XY53 2-pin connector for forward high clutch solenoid valve Y53 (EHM or EHM II)
- Y51 Reverse clutch solenoid valve (EHM or EHM II)
- Y52 Forward low clutch solenoid valve (EHM or EHM II)
- Y53 Forward high clutch solenoid valve (EHM or EHM II)

Component Information

Component Information

- Type:** Proportional solenoid valve
- Location:** Behind the r.h. side step
- Connector:** [XY52 - 2-Pin Connector for Forward Low Clutch Solenoid Valve Y52 \(EHM or EHM II\)](#)
- Harness:** [W03 - 24/12-Speed Transmission Wiring Harness](#)
or
[W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- Specifications and Details:** See component check below:
- Function:** Switches the transmission speed gear to low position.

Component Check

(1) Proportional valve

Action:

→NOTE:

Unplug the relevant solenoid valve from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B on the solenoid valve:

Item	Measurement	Specification
Proportional valve		
Solenoid valve:	Resistance	approx. 2.2 ohms
Current draw:	Current	below 2.1 amp

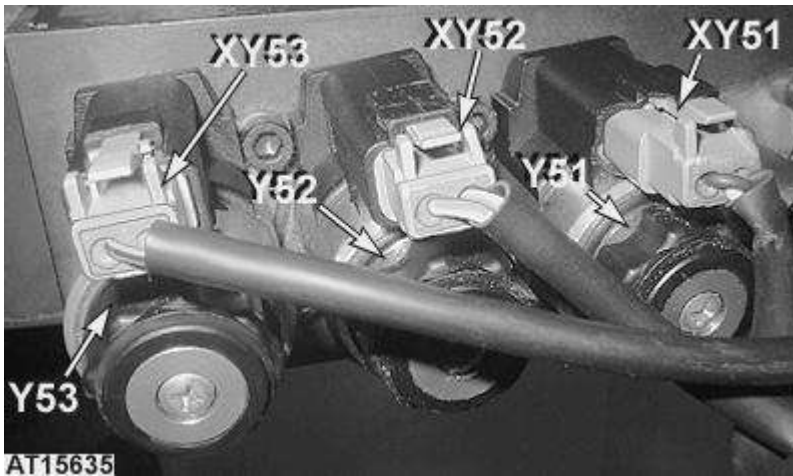
For extended checks, see also [SE26A - Forward Low Clutch \(EHM\), Diagnostic Schematic and Circuit Test](#) or [SE26B - Forward Low Clutch \(EHM II\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The solenoid valve is in good condition.

NO:Replace the solenoid valve.

Y53 - Forward High Clutch Solenoid Valve (EHM or EHM II)



2-pin connector for forward high clutch solenoid valve Y53 (EHM or EHM II)

LEGEND:

- XY51 2-pin connector for reverse clutch solenoid valve Y51 (EHM or EHM II)
- XY52 2-pin connector for forward low clutch solenoid valve Y52 (EHM or EHM II)
- XY53 2-pin connector for forward high clutch solenoid valve Y53 (EHM or EHM II)
- Y51 Reverse clutch solenoid valve (EHM or EHM II)
- Y52 Forward low clutch solenoid valve (EHM or EHM II)
- Y53 Forward high clutch solenoid valve (EHM or EHM II)

Component Information

Component Information

- Type:** Proportional solenoid valve
- Location:** Behind the r.h. side step
- Connector:** [XY53 - 2-Pin Connector for Forward High Clutch Solenoid Valve Y53 \(EHM or EHM II\)](#)
- Harness:** [W03 - 24/12-Speed Transmission Wiring Harness](#)
or
[W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- Specifications and Details:** See component check below:
- Function:** Switches the transmission speed gear to high position.

Component Check

(1) Proportional valve

Action:

→NOTE:

Unplug the relevant solenoid valve from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B on the solenoid valve:

Item	Measurement	Specification
Proportional valve		
Solenoid valve:	Resistance	approx. 2.2 ohms
Current draw:	Current	below 2.1 amp

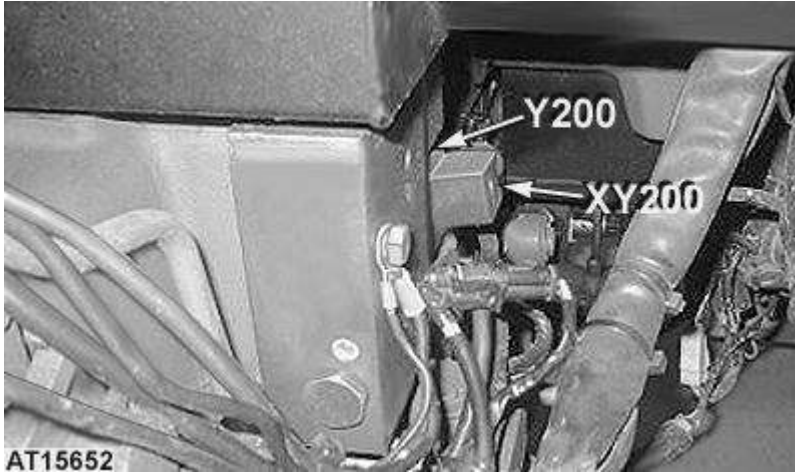
For extended checks, see also [SE26A - Forward High Clutch \(EHM\), Diagnostic Schematic and Circuit Test](#) or [SE26B - Forward High Clutch \(EHM II\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The solenoid valve is in good condition.

NO:Replace the solenoid valve.

Y200 - Raise Solenoid Valve (EHS)



Raise solenoid valve (EHS)

LEGEND:

- XY200 4-pin connector for raise solenoid valve Y200 (EHS)
- Y200 Raise solenoid valve (EHS)

Component Information

Component Information

- Type:** Proportional solenoid valve
- Location:** R.h. side of transmission
- Connector:** [XY200 - 4-Pin Connector for Raise Solenoid Valve Y200 \(EHS\)](#)
- Harness:** [W11 - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- Specifications and Details:** See component check below:
- Function:** Raises the hitch with float function

Component Check

(1) Proportional valve

Action:

→NOTE:

Unplug the proportional valve from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B on the solenoid valve:

Item	Measurement	Specification
Proportional valve		
Solenoid valve:	Resistance	approx. 8 ohms
Current draw:	Current	below 1.5 amp

The control unit provides the proportional valve with a pulse-width modulated (PWM) power supply. The amperage determines the rate of flow through the valve.

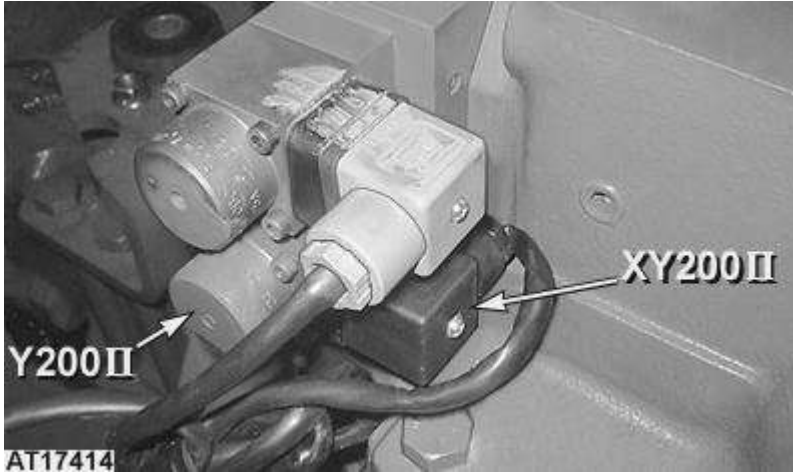
For extended checks, see also [SE15A - Raise Solenoid Valve Y200 \(EHS\), Diagnostic Schematic and Circuit Test](#) or [SE15A - Electronic Hitch Sensing \(EHS\) \(Summary of References\)](#) in this Section.

Result:

YES:The solenoid valve is in good condition.

NO:Replace the solenoid valve.

Y200 II - Raise Solenoid Valve (EHS II)



Raise solenoid valve (EHS II)

LEGEND:

- XY200 II 4-pin connector for raise solenoid valve Y200 II (EHS II)
- Y200 II Raise solenoid valve (EHS II)

Component Information

Component Information

Type:	Proportional solenoid valve
Location:	R.h. side of transmission
Connector:	XY200 II - 4-Pin Connector for Raise Solenoid Valve Y200 II (EHS II)
Harness:	W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Specifications and Details:	See component check below:
Function:	Raises the hitch with float function

Component Check

(1) Proportional valve

Action:

→NOTE:

Unplug the proportional valve from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B on the solenoid valve:

Item	Measurement	Specification
Proportional valve		
Solenoid valve:	Resistance	approx. 8 ohms
Current draw:	Current	below 1.5 amp

The control unit provides the proportional valve with a pulse-width modulated (PWM) power supply. The amperage determines the rate of flow through the valve.

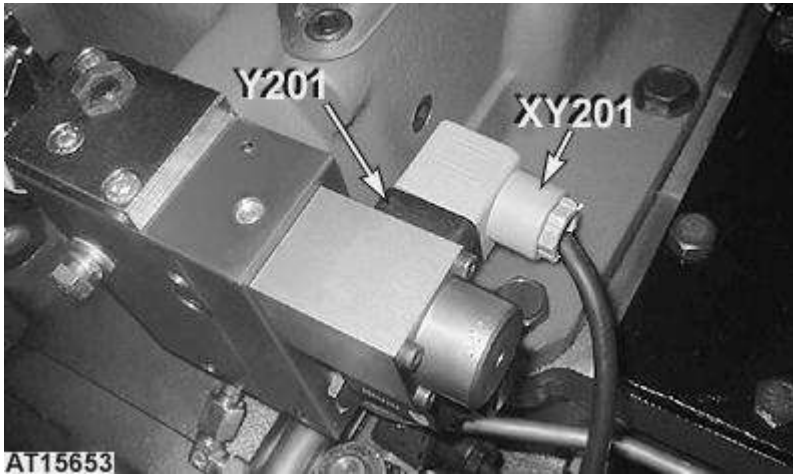
For extended checks, see also [SE15B - Raise Solenoid Valve Y200 II \(EHS II\), Diagnostic Schematic and Circuit Test](#) or [SE15B - Electronic Hitch Sensing \(EHS II\) \(Summary of References\)](#) in this Section.

Result:

YES:The solenoid valve is in good condition.

NO:Replace the solenoid valve.

Y201 - Lower Solenoid Valve (EHS)



Lower solenoid valve (EHS)

LEGEND:

- XY201 4-pin connector for lower solenoid valve Y201 (EHS)
- Y201 Lower solenoid valve (EHS)

Component Information

Component Information

- Type:** Solenoid valve
- Location:** R.h. side of transmission
- Connector:** [XY201 - 4-Pin Connector for Lower Solenoid Valve Y201 \(EHS\)](#)
- Harness:** [W11 - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- Specifications and Details:** See component check below:
- Function:** Lowers the hitch

Component Check

(1) Solenoid valve

Action:

→NOTE:

Unplug the relevant solenoid valve from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B on the solenoid valve:

Item	Measurement	Specification
Solenoid valve		
Solenoid valve:	Resistance	approx. 8 ohms
Current draw:	Current	below 1.5 amp

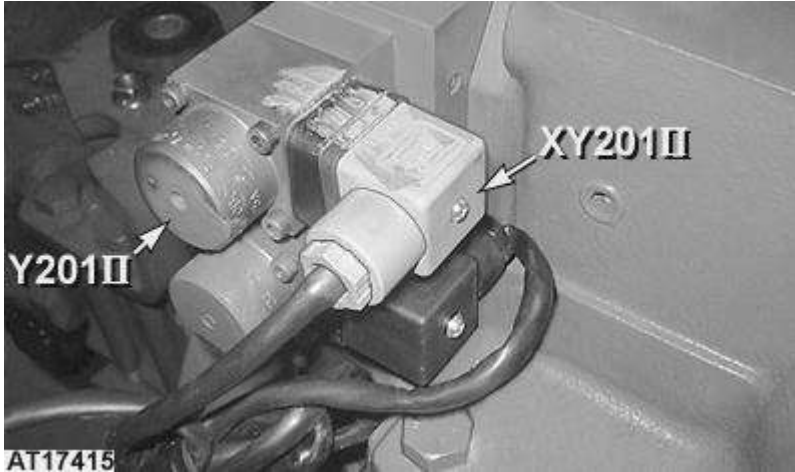
For extended checks, see also [SE15A - Lower Solenoid Valve Y201 \(EHS\), Diagnostic Schematic and Circuit Test](#) or [SE15A - Electronic Hitch Sensing \(EHS\) \(Summary of References\)](#) in this Section.

Result:

YES:The solenoid valve is in good condition.

NO:Replace the solenoid valve.

Y201 II - Lower Solenoid Valve (EHS II)



Lower solenoid valve (EHS II)

LEGEND:

- XY201 II 3-pin connector for lower solenoid valve Y201 II (EHS II)
- Y201 II Lower solenoid valve (EHS II)

Component Information

Component Information

- Type:** Solenoid valve
- Location:** R.h. side of transmission
- Connector:** [XY201 II - 3-Pin Connector for Lower Solenoid Valve Y201 II \(EHS II\)](#)
- Harness:** [W11 II - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)
- Specifications and Details:** See component check below:
- Function:** Lowers the hitch

Component Check

(1) Proportional valve

Action:

→NOTE:

Unplug the proportional valve from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B on the solenoid valve:

Item	Measurement	Specification
Proportional valve		
Solenoid valve:	Resistance	approx. 8 ohms
Current draw:	Current	below 1.5 amp

The control unit provides the proportional valve with a pulse-width modulated (PWM) power supply. The amperage determines the rate of flow through the valve.

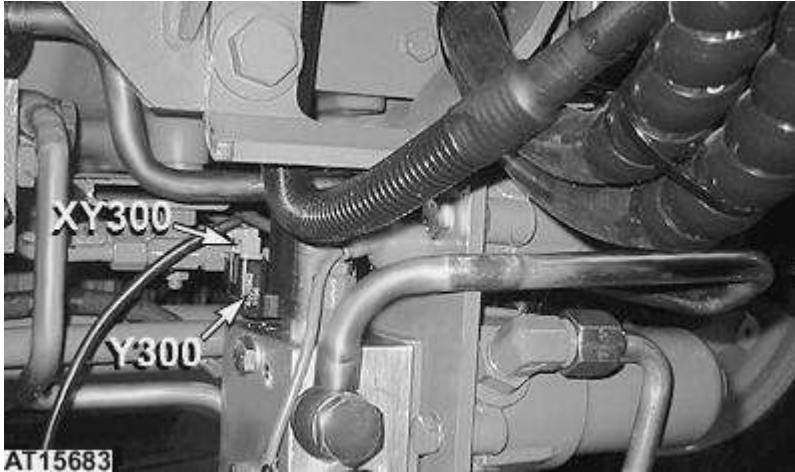
For extended checks, see also [SE15B - Lower Solenoid Valve Y201 II \(EHS II\), Diagnostic Schematic and Circuit Test](#) or [SE15B - Electronic Hitch Sensing \(EHS II\) \(Summary of References\)](#) in this Section.

Result:

YES:The solenoid valve is in good condition.

NO:Replace the solenoid valve.

Y300 - Shut-Off Solenoid Valve (EHM or EHM II)



Shut-off solenoid valve (EHM or EHM II)

LEGEND:

- XY300 2-pin connector for shut-off solenoid valve Y300 (EHM or EHM II)
- Y300 Shut-off solenoid valve (EHM or EHM II)

Component Information

Component Information

- Type:** Solenoid valve
- Location:** Behind the r.h. side step
- Connector:** [XY300 - 2-Pin Connector for Shut-Off Solenoid Valve Y300 \(EHM or EHM II\)](#)
- Harness:** [W12 - Shut-Off System Wiring Harness \(EHM\)](#)
or
[W03 II - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- Specifications and Details:** See component check below:
- Function:** Switches the transmission hydraulic circuit

Component Check

(1) Solenoid valve

Action:

→NOTE:

Unplug the relevant solenoid valve from the wiring harness.

Use a [JT05791A](#) multimeter to measure resistance between pins A and B on the solenoid valve:

Item	Measurement	Specification
Solenoid valve		
Solenoid valve:	Resistance	approx. 15 - 20 ohms
Current draw:	Current	below 1 amp

For extended checks, see also [SE26A - Shut-Off Solenoid Valve of Shut-Off System \(EHM\), Diagnostic Schematic and Circuit Test](#) or [SE26B - Shut-Off Solenoid Valve \(EHM II\), Diagnostic Schematic and Circuit Test](#) in this Section.

Result:

YES:The solenoid valve is in good condition.

NO:Replace the solenoid valve.

Group 120 - Component Information - Ground Connection

Component Location - Ground Connectors (Summary of References)

- [XGND01 - Ground Connection W01](#)
- [XGND02 - Ground Connection W02](#)
- [XGND03 - Ground Connection W04](#)
- [XGND04 - Ground Connection W10](#)
- [XGND05 - Ground Connection W11 or W11 II](#)
- [XGND06 - Ground Connection W11 or W11 II](#)
- [XGND07 - Ground Connection W11 or W11 II](#)
- [XGND08 - Ground Connection W11 or W11 II](#)

XGND01 - Ground Connection W01



ATXGND

Ground connection W01



Ground connection W01

LEGEND:

XGND01 Ground connection W01 (black lead)

XGND02 - Ground Connection W02



ATXGND

Ground connection W02



Ground connection



Ground connection

LEGEND:

- XGND02/1 Ground connection (black lead)
- XGND02/2 Ground connection (black lead)

XGND03 - Ground Connection W04



ATXGND

XGND03 - ground connection W04



XGND03 - ground connection W04

LEGEND:

XGND03 Ground connection W04 (black lead)

XGND04 - Ground Connection W10



ATXGND

XGND04 - ground connection W10



Ground connection W10

LEGEND:

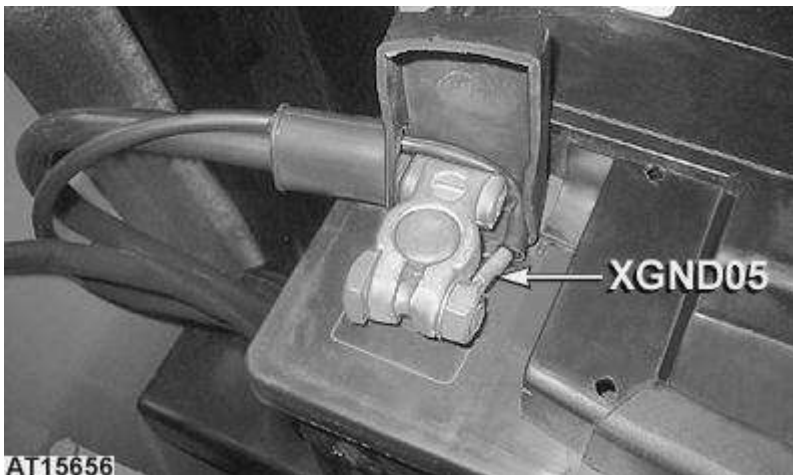
XGND04 Ground connection W10 (black lead)

XGND05 - Ground Connection W11 or W11 II



ATXGND

Ground connection W11 or W11 II



AT15656

Ground connection W11 or W11 II

LEGEND:

XGND05 Ground connection W11 or W11 II

Component information

Component information	
Number of pins:	1
Connection Point:	To tractor
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS) or W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15A - Electronic Hitch Sensing (EHS) (Summary of References) or SE15B - Electronic Hitch Sensing (EHS II) (Summary of References)

Plug layout

Plug layout	
Pin no.	Wire color
1	black

XGND06 - Ground Connection W11 or W11 II



ATXGND

Ground connection W11 or W11 II



Ground connection W11 or W11 II

LEGEND:

XGND06 Ground connection W11 or W11 II

Component information

Component information	
Number of pins:	1
Connection Point:	To tractor
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS) or W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15A - Electronic Hitch Sensing (EHS) (Summary of References) or SE15B - Electronic Hitch Sensing (EHS II) (Summary of References)

Plug layout

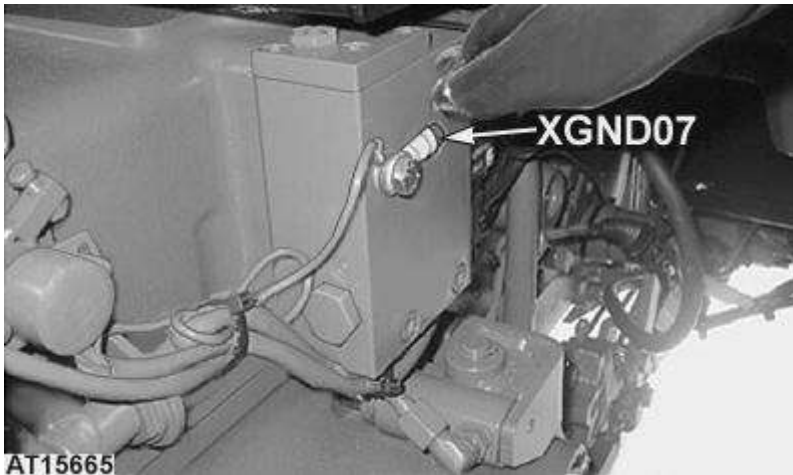
Plug layout	
Pin no.	Wire color
1	black

XGND07 - Ground Connection W11 or W11 II



ATXGND

Ground connection W11 or W11 II



Ground connection W11 or W11 II

LEGEND:

XGND07 Ground connection W11 or W11 II

Component information

Component information	
Number of pins:	1
Connection Point:	To tractor
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS) or W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15A - Electronic Hitch Sensing (EHS) (Summary of References) or SE15B - Electronic Hitch Sensing (EHS II) (Summary of References)

Plug layout

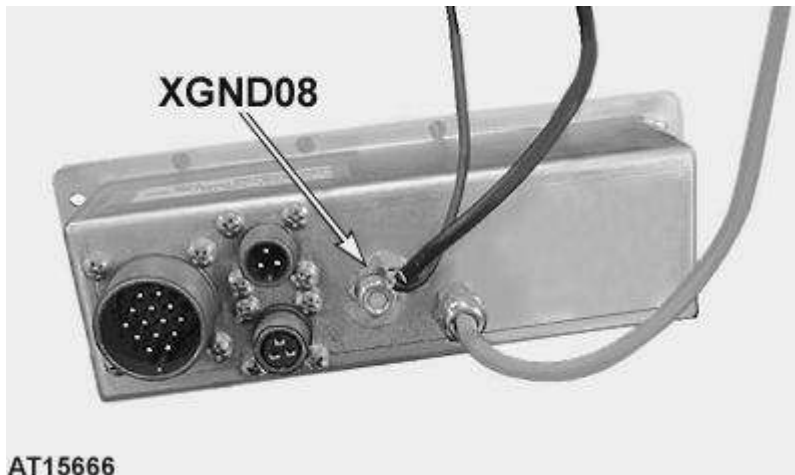
Plug layout	
Pin no.	Wire color
1	black

XGND08 - Ground Connection W11 or W11 II



ATXGND

Ground connection W11 or W11 II



AT15666

Ground connection W11 or W11 II

LEGEND:

XGND08 Ground connection W11 or W11 II

Component information

Component information	
Number of pins:	1
Connection Point:	To tractor
Wiring harness:	W11 - Electronic Hitch Sensing Wiring Harness (EHS) or W11 II - Electronic Hitch Sensing Wiring Harness (EHS II)
Circuit:	SE15A - Electronic Hitch Sensing (EHS) (Summary of References) or SE15B - Electronic Hitch Sensing (EHS II) (Summary of References)

Plug layout

Plug layout	
Pin no.	Wire color
1	black

Group 200 - Wiring Diagrams

Wiring Diagrams - Summary of References

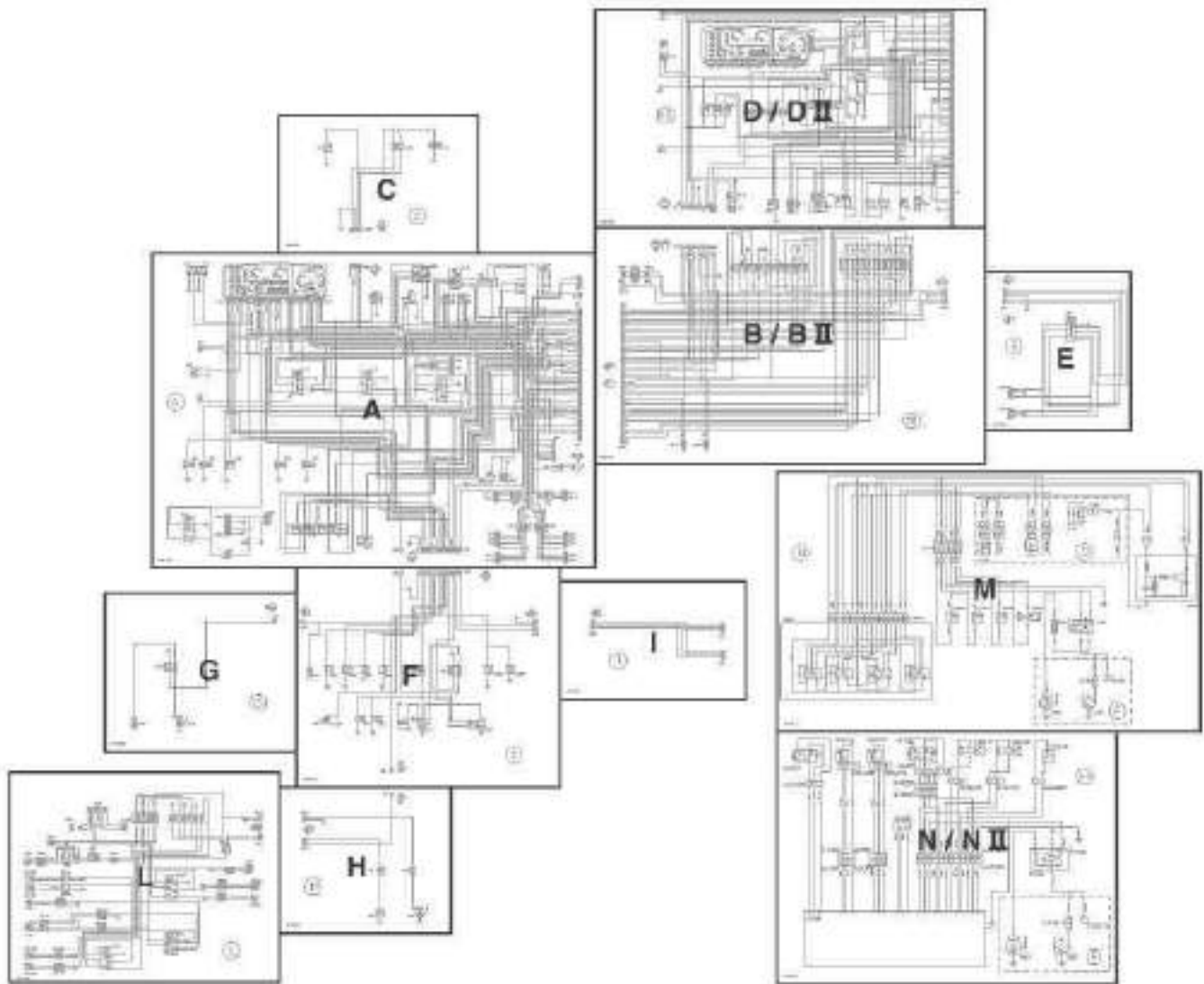
- [Wiring Color Chart](#)
- [Wiring Diagram - General Wiring Harness](#)
- [Wiring Diagram "A" - Main Wiring Harness](#)
- [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- [Wiring Diagram "B II" - Fuse Box II Wiring Harness](#)
- [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- [Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)
- [Wiring Diagram "F" - Engine Wiring Harness](#)
- [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)
- [Wiring Diagram "I" - Hood Wiring Harness](#)
- [Wiring Diagram "L" - Cab Wiring Harness](#)
- [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)
- [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Color Chart

DEFINITIONS:

"A"	Orange
"B"	White
"C"	Pink
"D"	Grey
"E"	Green
"F"	Blue
"G"	Yellow
"H"	Light blue
"M"	Brown
"N"	Black
"R"	Red
"V"	Violet

Wiring Diagram - General Wiring Harness



AT17491

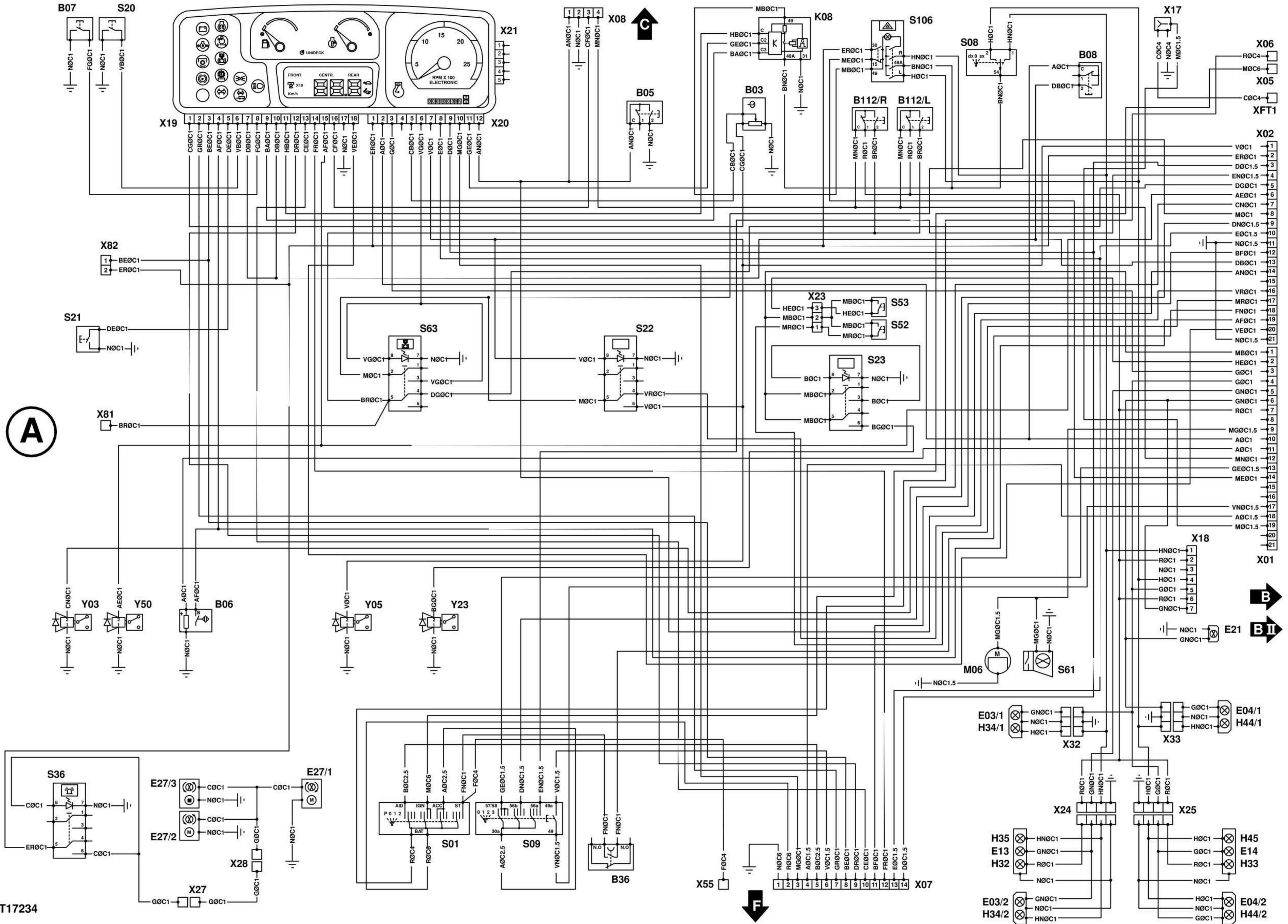
General wiring harness

The general wiring harness shows the connection between the following wiring harnesses:

- (A) - [Wiring Diagram "A" - Main Wiring Harness](#)
- (B) - [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- (B II) - [W16 - Fuse and Relay Box II Wiring Harness](#)
- (C) - [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- (D) - [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- (D II) - [Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- (E) - [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)

- (F) - [Wiring Diagram "F" - Engine Wiring Harness](#)
- (G) - [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- (H) - [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)
- (I) - [Wiring Diagram "I" - Hood Wiring Harness](#)
- (L) - [Wiring Diagram "L" - Cab Wiring Harness](#)
- (M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)
- (N) - [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- (N II) - [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Diagram "A" - Main Wiring Harness



A

B

B II

F

AT17234

Main wiring harness "A"

LEGEND:

B03	Fuel level sensor
B05	Parking brake switch
B06	Transmission speed sensor
B07	PTO speed selection switch
B08	PTO neutral start switch
B36	Neutral start switch
B112/L	Brake pedal switch l.h.
B112/R	Brake pedal switch r.h.
E03/1	Clearance light l.h. (tractors with cab)
E03/2	Clearance light l.h. (tractors without cab)
E04/1	Clearance light r.h. (tractors with cab)
E04/2	Clearance light r.h. (tractors without cab)
E13	Tail light l.h.
E14	Tail light r.h.
E21	License plate light
E27/1	Preparation for beacon light installation
E27/2	Preparation for beacon light installation
E27/3	Preparation for beacon light installation
H32	Stop light l.h.
H33	Stop light r.h.
H34/1	Turn signal light l.h. (front side) (tractors with cab)
H34/2	Turn signal light l.h. (front side) (tractors without cab)
H35	Turn signal light l.h. (back side)
H44/1	Turn signal light r.h. (front side) (tractors with cab)
H44/2	Turn signal light r.h. (front side) (tractors without cab)
H45	Turn signal light r.h. (back side)
K08	Turn/warn signal relay
M06	Air suspension seat compressor motor
S01	Main switch
S08	Turn signal light switch
S09	Light and horn switch
S20	Calibration switch of digital instrument
S21	PTO mode switch
S22	Reversal switch for allocation (flow divider valve)
S23	Differential lock switch
S36	Beacon light switch
S52	Hi-Lo solenoid valve switch (low)
S53	Hi-Lo solenoid valve switch (high)
S61	Rear work light with switch
S63	Front-wheel drive switch
S106	Hazard warning light switch
X01	21-pin connector for fuse box (white)
X02	21-pin connector for fuse box (black)
X05	1-pin connector for fuse box (+15)
X06	1-pin connector for fuse box (+30)
X07	14-pin interconnection between wiring harnesses W01 and W02
X08	4-pin interconnection between trailer brake wiring harness and W02
X17	3-pin connector for 3-pin power outlet

X18	7-pin connector for 7-pin trailer brake socket
X19	18-pin connector for instrument panel
X20	12-pin connector for instrument panel
X23	3-pin connector for Hi-Lo switches (S53 and S52)
X24	4-pin connector for E03, E14, H33, H34 and H44
X25	4-pin connector for E04, E13, H32, H35 and H45
X27	2-pin interconnection between wiring harnesses W02 and W08
X28	2-pin interconnection between wiring harnesses W08/1 and W08/2
X32	3-pin connector for E03 and H44 (tractors with cab)
X33	3-pin connector for E04 and H45 (tractors with cab)
X55	1-pin interconnection between wiring harnesses W01 and W02
X81	1-pin interconnection between wiring harnesses W02 and W03 II (used only with EHM II)
X82	2-pin interconnection between wiring harnesses W02 and W03 II (used only with EHM II)
XFT01	1-pin connector, main harness W02 to fuse box (3-pin power outlet)
Y03	Front-wheel drive solenoid valve
Y05	Differential lock solenoid valve
Y23	Flow divider solenoid valve
Y50	Electro-hydraulic Hi-Lo solenoid valve (24/24-speed transmission only)

References: Component Information - Connectors

- [B03 - Fuel Level Sensor](#)
- [B05 - Parking Brake Switch](#)
- [B06 - Transmission Speed Sensor](#)
- [B07 - PTO Speed Selection Switch](#)
- [B36 - Neutral Start Switch](#)
- [B112 - Brake Pedal Switches](#)

- [E03/1 - Clearance Light l.h. \(Tractors with Cab\)](#)
- [E03/2 - Clearance Light l.h. \(Tractors without Cab\)](#)
- [E04/1 - Clearance Light r.h. \(Tractors with Cab\)](#)
- [E04/2 - Clearance Light r.h. \(Tractors without Cab\)](#)
- [E13 - Tail Light l.h.](#)
- [E14 - Tail Light r.h.](#)
- [E21 - License Plate Light](#)
- [E27 - Beacon Light](#)

- [H32 - Stop Light l.h.](#)
- [H33 - Stop Light r.h.](#)
- [H34/1 - Turn Signal Light l.h. \(Tractors with Cab\)](#)
- [H34/2 - Turn Signal Light l.h. \(Front Side\) \(Tractors without Cab\)](#)
- [H35 - Turn Signal Light l.h. \(Rear side\)](#)
- [H44/1 - Turn Signal Light r.h. \(Tractors with Cab\)](#)
- [H44/2 - Turn Signal Light r.h. \(Front Side\) \(Tractors without Cab\)](#)
- [H45 - Turn Signal Light r.h. \(Rear side\)](#)

- [K08 - Turn/Warn Signal Relay](#)
- [M06 - Air Suspension Seat Compressor Motor](#)
- [S01 - Main Switch](#)
- [S08 - Turn Signal Light Switch](#)
- [S09 - Light and Horn Switch](#)
- [S20 - Calibration Switch of Digital Instrument](#)
- [S21 - PTO Mode Switch](#)
- [S22 - Differential Lock Switch](#)
- [S23 - Reversal Switch for Allocation \(Flow Divider Valve\)](#)
- [S36 - Beacon Light Switch](#)
- [S52 - Hi-Lo Solenoid Valve Switch \(low\)](#)
- [S53 - Hi-Lo Solenoid Valve Switch \(high\)](#)
- [S61 - Rear Work Light with Switch](#)
- [S63 - Front-Wheel Drive Switch](#)
- [S106 - Hazard Warning Light Switch](#)

- [X01 - 21-Pin Connector for Fuse Box \(White\)](#)
- [X02 - 21-Pin Connector for Fuse Box \(Black\)](#)
- [X05 - 1-Pin Connector for Fuse Box \(+15\)](#)
- [X06 - 1-Pin Connector for Fuse Box \(+30\)](#)
- [X07 - 14-Pin Interconnection between Wiring Harnesses W01 and W02](#)
- [X08 - 4-pin Interconnection between Trailer Brake Wiring Harness and W02](#)
- [X17 - 3/1-Pin Connectors for 3-Pin Power Outlet](#)
- [X18 - 7-Pin Connector for 7-Pin Trailer Brake Socket](#)
- [X19 - 18-Pin Connector for Instrument Panel](#)
- [X20 - 12-Pin Connector for Instrument Panel](#)
- [X23 - 3-Pin Connector for Hi-Lo Switches \(S53 and S52\)](#)
- [X24 - 4-Pin Connector for E03/2, E13, H32, H34/2 and H35 Lights l.h.](#)
- [X25 - 4-Pin Connector for E04/2, E14, H33, H44/2 and H45 Lights r.h.](#)
- [X27 - 2-Pin Interconnection between Wiring Harnesses W02 and W08](#)
- [X28 - 2-Pin interconnection between wiring harnesses W08/1 and W08/2](#)
- [X32 - 3-Pin Connector for E03/1 and H34/1 Lights l.h. \(Tractors with Cab\)](#)
- [X33 - 3-Pin Connector for E04/1 and H44/1 Lights r.h. \(Tractors with Cab\)](#)
- [X55 - 1-Pin Interconnection between Wiring Harnesses W01 and W02](#)
- [X81 - 1-Pin Interconnection between Wiring Harnesses W02 and W03 II](#)
- [X82 - 2-Pin Interconnections between Wiring Harnesses W02 and W03 II](#)

- [XFT01 - 1-Pin Connector for Fuse Box \(3-Pin Power Outlet\)](#)

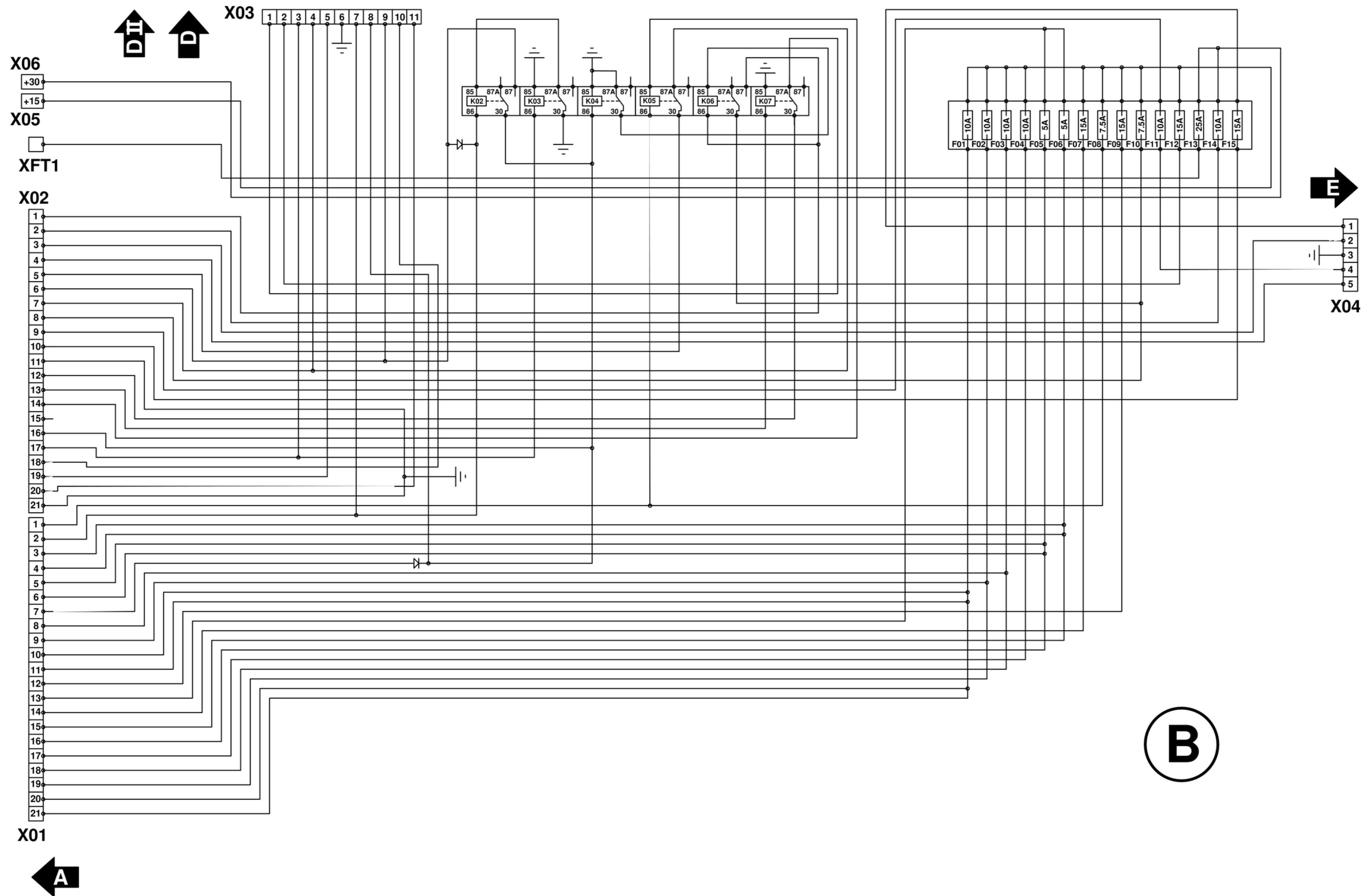
- [Y03 - Front-Wheel Drive Solenoid Valve](#)
- [Y05 - Differential Lock Solenoid Valve](#)
- [Y23 - Flow Divider Solenoid Valve](#)
- [Y50 - Electro-Hydraulic Hi-Lo Solenoid Valve \(24/24-Speed Transmission only\)](#)

For further information, see [Wiring Color Chart](#) in this group.

The following wiring harnesses are connected directly or indirectly to the main wiring harness "A". See in this group:

- (B) - [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- (B II) - [W16 - Fuse and Relay Box II Wiring Harness](#)
- (C) - [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- (D) - [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- (D II) - [Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- (E) - [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)
- (F) - [Wiring Diagram "F" - Engine Wiring Harness](#)
- (G) - [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- (H) - [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)
- (I) - [Wiring Diagram "I" - Hood Wiring Harness](#)
- (L) - [Wiring Diagram "L" - Cab Wiring Harness](#)
- (M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)
- (N) - [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- (N II) - [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Diagram "B" - Fuse Box Wiring Harness



Fuse box wiring harness "B"

LEGEND:

F01	10 amp fuse; PTO neutral start switch, transmission speed sensor
F02	10 amp fuse; 3-terminal socket +15, air suspension seat, work lights (outer)
F03	10 amp fuse; alternator, charging indicator light, fuel shut-off solenoid valve, fuel pump, cab +15
F04	10 amp fuse; horn
F05	5 amp fuse; 7-terminal socket, clearance light l.h., tail light r.h., license plate light
F06	5 amp fuse; 7-terminal socket, clearance light r.h., tail light l.h., instrument panel light
F07	15 amp fuse; turning lights via warning light switch +15
F08	7.5 amp fuse; relay K05, Hi-Lo switch, reversal switch for allocation (flow divider solenoid valve)
F09	15 amp fuse; trailer brake relay, brake pedal switch
F10	7,5 amp fuse; relay K04, differential lock switch, front-wheel drive switch
F11	10 amp fuse; low beam lights
F12	15 amp fuse; 24/12-speed transmission circuit
F13	25 amp fuse; 3-terminal socket +30
F14	10 amp fuse; beacon light, clock, warning light switch +30
F15	15 amp fuse; high beam indicator and high beam lights
K02	Hi-Lo relay (ON)
K03	Hi-Lo relay (OFF)
K04	Differential lock relay (ON)
K05	Front-wheel drive relay
K06	Differential lock relay (OFF)
K07	PTO neutral start relay
X01	21-pin connector for fuse box (white)
X02	21-pin connector for fuse box (black)
X03	11-pin connector for fuse box
X04	5-pin connector for fuse box
X05	1-pin connector for fuse box (+15)
X06	1-pin connector for fuse box (+30)
XFT01	1-pin connector, main harness W02 to fuse box (3-pin power outlet)

References: Component Information - Connectors

- [F01 to F15 - Fuse Box](#)
- [K02 - Hi-Lo Relay \(ON\)](#)
- [K03 - Hi-Lo Relay \(OFF\)](#)
- [K04 - Differential Lock Relay \(ON\)](#)
- [K05 - Front-Wheel Drive Relay](#)
- [K06 - Differential Lock Relay \(OFF\)](#)
- [K07 - PTO Neutral Start Relay](#)
- [X01 - 21-Pin Connector for Fuse Box \(White\)](#)

- [X02 - 21-Pin Connector for Fuse Box \(Black\)](#)
- [X03 - 11-Pin Connector for Fuse Box](#)
- [X04 - 5-Pin Connector for Fuse Box](#)
- [X05 - 1-Pin Connector for Fuse Box \(+15\)](#)
- [X06 - 1-Pin Connector for Fuse Box \(+30\)](#)

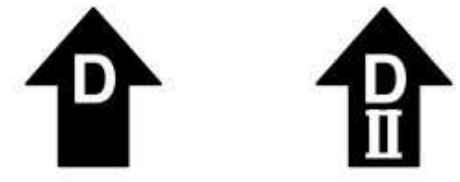
- [XFT01 - 1-Pin Connector for Fuse Box \(3-Pin Power Outlet\)](#)

For further information, see [Wiring Color Chart](#) in this group.

The following wiring harnesses are connected directly or indirectly to the fuse box wiring harness "B". See in this group:

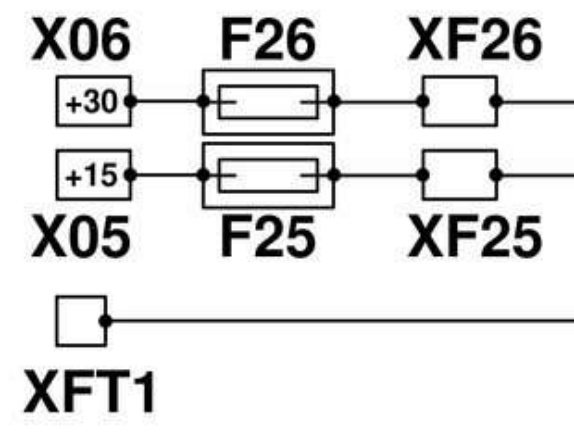
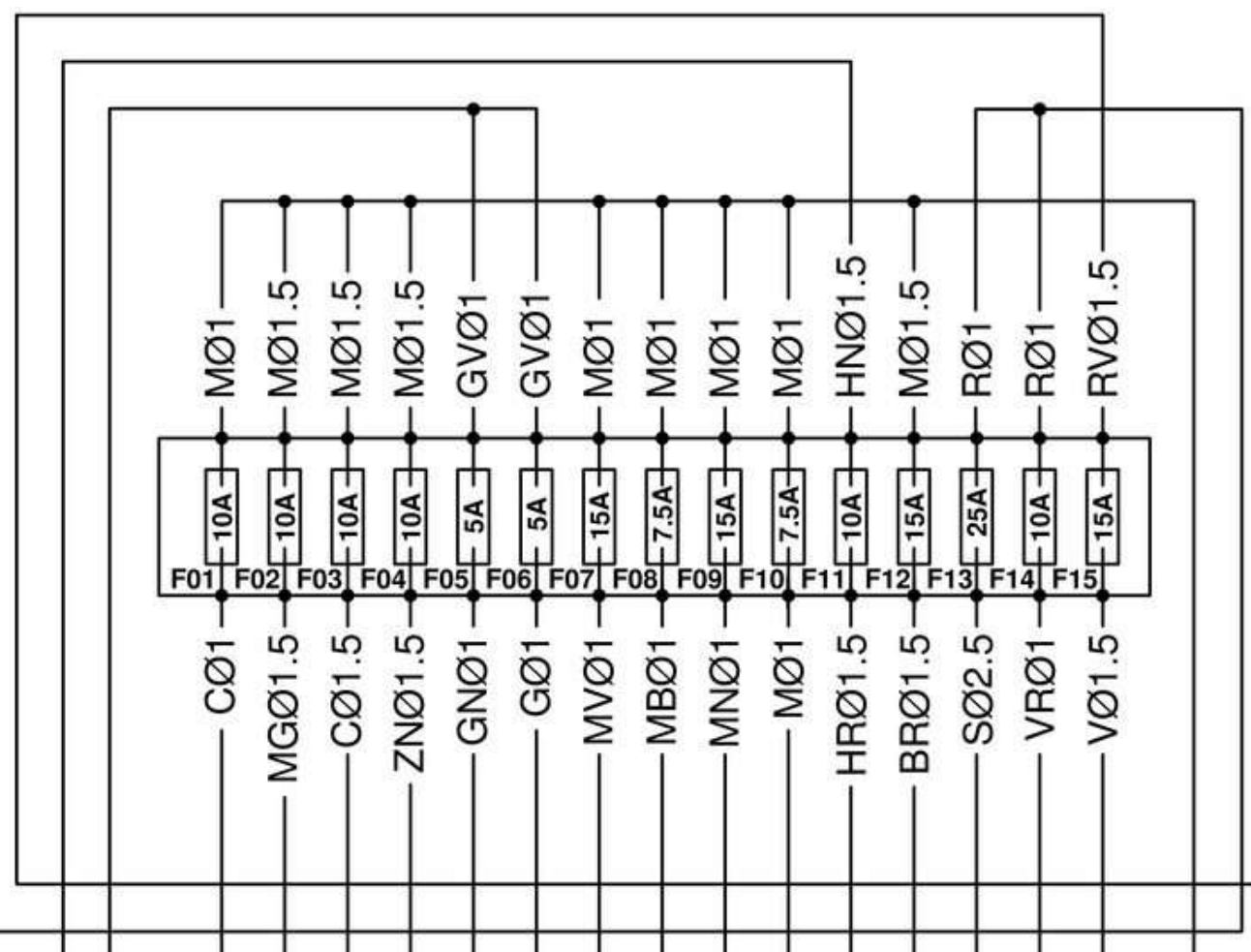
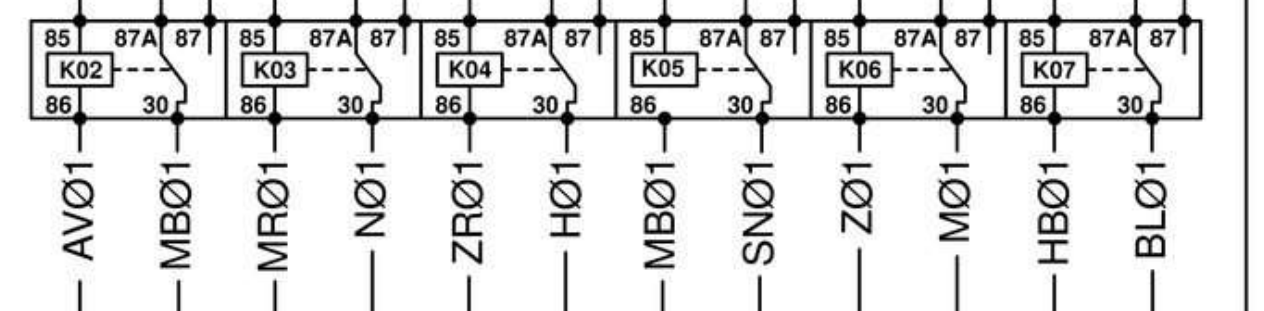
- (A) - [Wiring Diagram "A" - Main Wiring Harness](#)
- (B II) - [W16 - Fuse and Relay Box II Wiring Harness](#)
- (C) - [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- (D) - [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- (D II) - [Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- (E) - [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)
- (F) - [Wiring Diagram "F" - Engine Wiring Harness](#)
- (G) - [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- (H) - [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)
- (I) - [Wiring Diagram "I" - Hood Wiring Harness](#)
- (L) - [Wiring Diagram "L" - Cab Wiring Harness](#)
- (M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)
- (N) - [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- (N II) - [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Diagram "B II" - Fuse Box II Wiring Harness



X03 1 2 3 4 5 6 7 8 9 10 11

BLØ1 BRØ1.5 MFØ1 HGØ1 CLØ1 NØ1.5 AVØ1 ZRØ1 CVØ1 LNØ1 ZVØ1



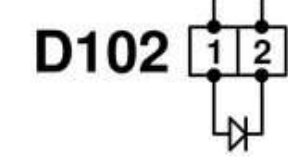
RVØ1.5 1
HØ1.5 2
NØ1.5 3
HRØ1.5 4
VNØ1.5 5

X04

1 ZØ1
2 VRØ1
3 HØ1.5
4 VNØ1.5
5 SNØ1
6 CVØ1
7 HGØ1
8 MØ1
9 HNØ1.5
10 VØ1.5
11 NØ1.5
12 BLØ1
13 HBØ1
14 CNØ1
15
16 ZRØ1
17 MRØ1
18 LNØ1
19 CLØ1
20 ZVØ1
21 NØ1.5



X01



AT17400

Fuse box II wiring harness "B II"

LEGEND:

D101	Differential lock diode
D102	Hi-Lo diode
F01	10 amp fuse; PTO neutral start switch, transmission speed sensor
F02	10 amp fuse; 3-terminal socket +15, air suspension seat, work lights (outer)
F03	10 amp fuse; alternator, charging indicator light, fuel shut-off solenoid valve, fuel pump, cab +15
F04	10 amp fuse; horn
F05	5 amp fuse; 7-terminal socket, clearance light l.h., tail light r.h., license plate light
F06	5 amp fuse; 7-terminal socket, clearance light r.h., tail light l.h., instrument panel light
F07	15 amp fuse; turning lights via warning light switch +15
F08	7.5 amp fuse; relay K05, Hi-Lo switch, reversal switch for allocation (flow divider solenoid valve)
F09	15 amp fuse; trailer brake relay, brake pedal switch
F10	7,5 amp fuse; relay K04, differential lock switch, front-wheel drive switch
F11	10 amp fuse; low beam lights
F12	15 amp fuse; 24/12-speed transmission circuit
F13	25 amp fuse; 3-terminal socket +30
F14	10 amp fuse; beacon light, clock, warning light switch +30
F15	15 amp fuse; high beam indicator and high beam lights
F25	50 amp main fuses of fuse and relay box II (+15)
F26	50 amp main fuses of fuse and relay box II (+30)
K02	Hi-Lo relay (ON)
K03	Hi-Lo relay (OFF)
K04	Differential lock relay (ON)
K05	Front-wheel drive relay
K06	Differential lock relay (OFF)
K07	PTO neutral start relay
X01	21-pin connector for fuse box (white)
X02	21-pin connector for fuse box (black)
X03	11-pin connector for fuse box
X04	5-pin connector for fuse box
X05	1-pin connector for fuse box (+15)
X06	1-pin connector for fuse box (+30)
XF25	1-pin connector for main fuse F25 of fuse and relay box II (+15)
XF26	1-pin connector for main fuse F26 of fuse and relay box II (+30)
XFT01	1-pin connector, main harness W02 to fuse box (3-pin power outlet)

References: Component Information - Connectors

[D101 - Differential Lock Diode](#)

[D102 - Hi-Lo Diode](#)

- [F01 to F15 - Fuse Box](#)
- [F25 - Main Fuse of Fuse and Relay Box II \(+15\)](#)
- [F26 - Main Fuse of Fuse and Relay Box II \(+30\)](#)

- [K02 - Hi-Lo Relay \(ON\)](#)
- [K03 - Hi-Lo Relay \(OFF\)](#)
- [K04 - Differential Lock Relay \(ON\)](#)
- [K05 - Front-Wheel Drive Relay](#)
- [K06 - Differential Lock Relay \(OFF\)](#)
- [K07 - PTO Neutral Start Relay](#)

- [X01 - 21-Pin Connector for Fuse Box \(White\)](#)
- [X02 - 21-Pin Connector for Fuse Box \(Black\)](#)
- [X03 - 11-Pin Connector for Fuse Box](#)
- [X04 - 5-Pin Connector for Fuse Box](#)
- [X05 - 1-Pin Connector for Fuse Box \(+15\)](#)
- [X06 - 1-Pin Connector for Fuse Box \(+30\)](#)

- [XFT01 - 1-Pin Connector for Fuse Box \(3-Pin Power Outlet\)](#)

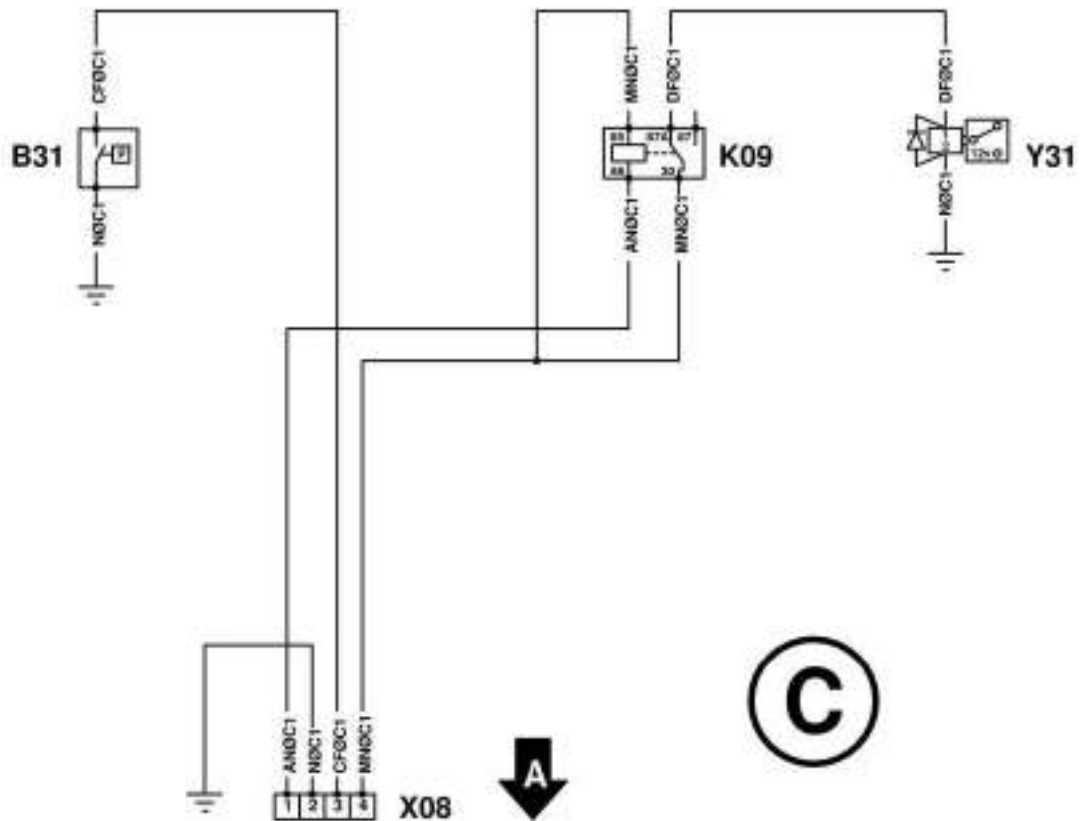
For further information, see [Wiring Color Chart](#) in this group.

The following wiring harnesses are connected directly or indirectly to the fuse box wiring harness "B II". See in this group:

- (A) - [Wiring Diagram "A" - Main Wiring Harness](#)
- (B) - [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- (C) - [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- (D) - [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- (D II) - [Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- (E) - [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)
- (F) - [Wiring Diagram "F" - Engine Wiring Harness](#)
- (G) - [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- (H) - [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)
- (I) - [Wiring Diagram "I" - Hood Wiring Harness](#)
- (L) - [Wiring Diagram "L" - Cab Wiring Harness](#)
- (M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)
- (N) - [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)

(N II) - [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Diagram "C" - Trailer Brake Valve Wiring Harness



AT15486

Trailer brake valve wiring harness "C"

LEGEND:

- B31 Trailer brake pressure switch
- K09 Trailer brake relay
- X08 3-pin interconnection between wiring harnesses W01 and W09
- Y31 Trailer brake solenoid valve

References: Component Information - Connectors

- [B31 - Trailer Brake Pressure Switch](#)
- [K09 - Trailer Brake Relay](#)
- [X08 - 3-Pin Interconnection between Wiring Harnesses W01 and W09](#)
- [Y31 - Trailer Brake Solenoid Valve](#)

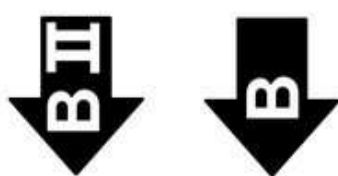
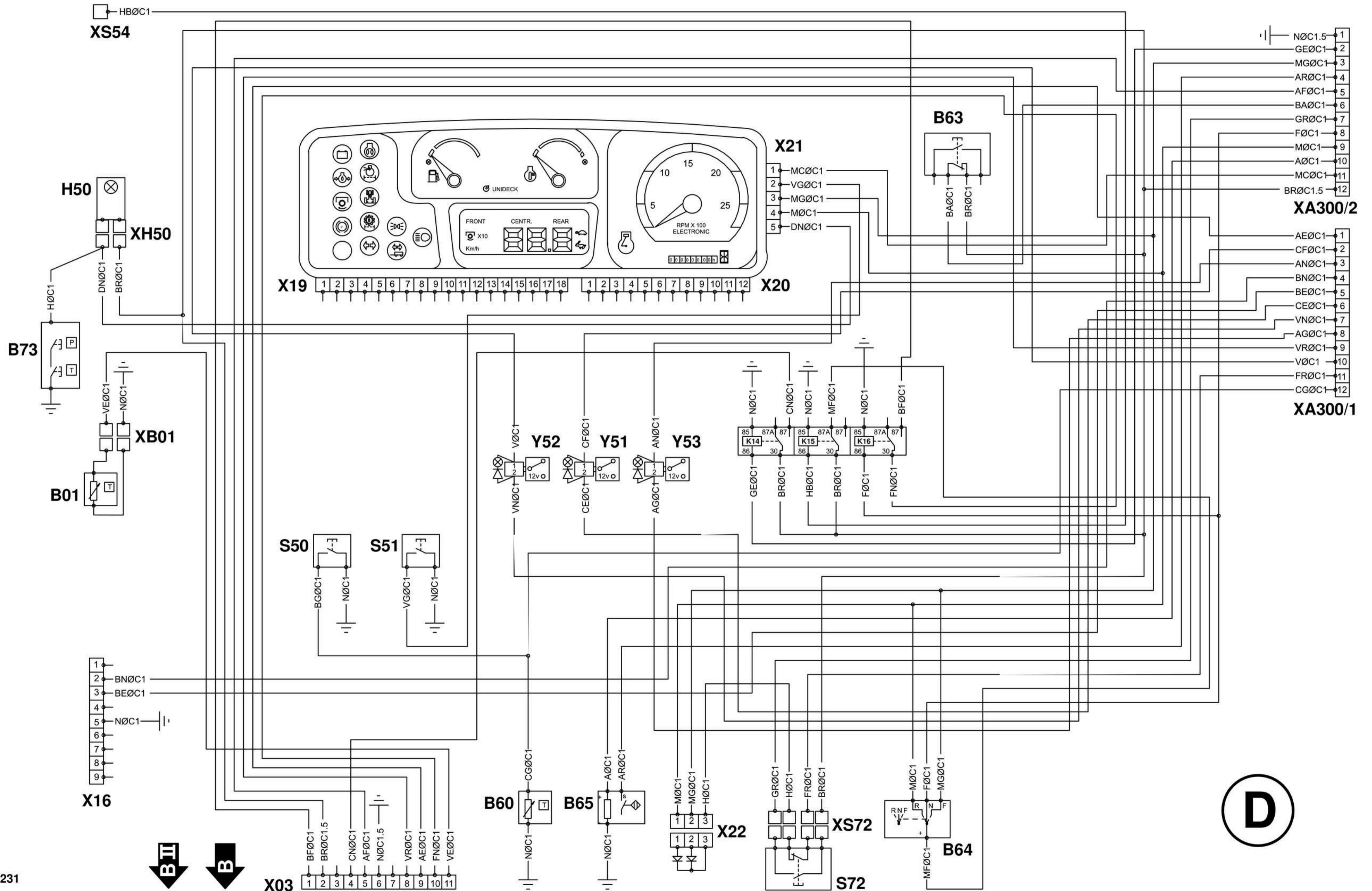
For further information, see [Wiring Color Chart](#) in this group.

The following wiring harnesses are connected directly or indirectly to the trailer brake valve

wiring harness "C". See in this group:

- (A) - [Wiring Diagram "A" - Main Wiring Harness](#)
- (B) - [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- (B II) - [W16 - Fuse and Relay Box II Wiring Harness](#)
- (D) - [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- (D II) - [Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- (E) - [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)
- (F) - [Wiring Diagram "F" - Engine Wiring Harness](#)
- (G) - [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- (H) - [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)
- (I) - [Wiring Diagram "I" - Hood Wiring Harness](#)
- (L) - [Wiring Diagram "L" - Cab Wiring Harness](#)
- (M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)
- (N) - [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- (N II) - [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness (EHM)



24/12-speed transmission wiring harness (EHM) "D"

LEGEND:

B01	Ambient temperature sensor
B60	Transmission oil temperature sensor
B63	High range/low range switch on transmission (EHM or EHM II)
B64	Reverse drive lever switch
B65	Clutch pedal potentiometer
B73	Oil filter restriction sensor (EHM or EHM II)
H50	Warning light (EHM or EHM II)
K14	Front-wheel drive relay (EHM or EHM II)
K15	Declutch relay (EHM or EHM II)
K16	Neutral start relay (EHM or EHM II)
S50	Calibration switch (EHM or EHM II)
S51	Calibration switch of digital instrument (EHM or EHM II)
S72	Clutch pedal switch (EHM or EHM II)
X03	11-pin connector for fuse box
X16	9-pin com-port for diagnostic connector (EHM or EHM II) to PC
X21	5-pin connector for instrument panel (EHM or EHM II)
X22	3-pin connector for diodes (EHM or EHM II)
XA300/1	12-pin connector for EHM control panel A300 (grey)
XA300/2	12-pin connector for EHM control panel A300 (black)
XB01	2-pin connector for ambient temperature sensor B01 (EHM or EHM II)
XH50	2-pin connector for warning light H50 (EHM or EHM II)
XS54	1-pin connector for declutch switch S54 (EHM or EHM II)
XS72	4/1-pin connectors for clutch pedal switch S72 (EHM or EHM II)
Y51	Reverse clutch solenoid valve (EHM or EHM II)
Y52	Forward low clutch solenoid valve (EHM or EHM II)
Y53	Forward high clutch solenoid valve (EHM or EHM II)

References: Component Information - Connectors

- [B01 - Ambient Temperature Sensor](#)
- [B60 - Transmission Oil Temperature Sensor](#)
- [B63 - High Range/Low Range Switch on Transmission \(EHM or EHM II\)](#)
- [B64 - Reverse Drive Lever Switch](#)
- [B65 - Clutch Pedal Potentiometer](#)
- [B73 - Oil Filter Restriction Sensor \(EHM or EHM II\)](#)

- [H50 - Warning Light \(EHM or EHM II\)](#)

- [K14 - Front-Wheel Drive Relay \(EHM or EHM II\)](#)
- [K15 - Declutch Relay \(EHM or EHM II\)](#)
- [K16 - Neutral Start Relay \(EHM or EHM II\)](#)

- [S50 - Calibration Switch \(EHM or EHM II\)](#)
- [S51 - Calibration Switch of Digital Instrument \(EHM or EHM II\)](#)
- [S72 - Clutch Pedal Switch \(EHM or EHM II\)](#)

- [X03 - 11-Pin Connector for Fuse Box](#)
- [X16 - 9-Pin Com-Port for Diagnostic Connector \(EHM\) to PC](#)
- [X21 - 5-Pin Connector for Instrument Panel](#)
- [X22 - 3-Pin Connector for Diodes](#)
- [XA301 - 17-Pin Connector for Relay Box A301 \(EHM\)](#)
- [XA302 - 5-Pin Connector for Time-Delay Switch A302 \(EHM\)](#)
- [XB01 - 2-Pin Connector for Ambient Temperature Sensor B01 \(EHM or EHM II\)](#)
- [XH50 - 2-Pin Connector for Warning Light H50 \(EHM or EHM II\)](#)
- [XS54 - 1-Pin Connector for Declutch Switch S54](#)
- [XS72 - 4/1-Pin Connectors for Clutch Pedal Switch S72 \(EHM or EHM II\)](#)

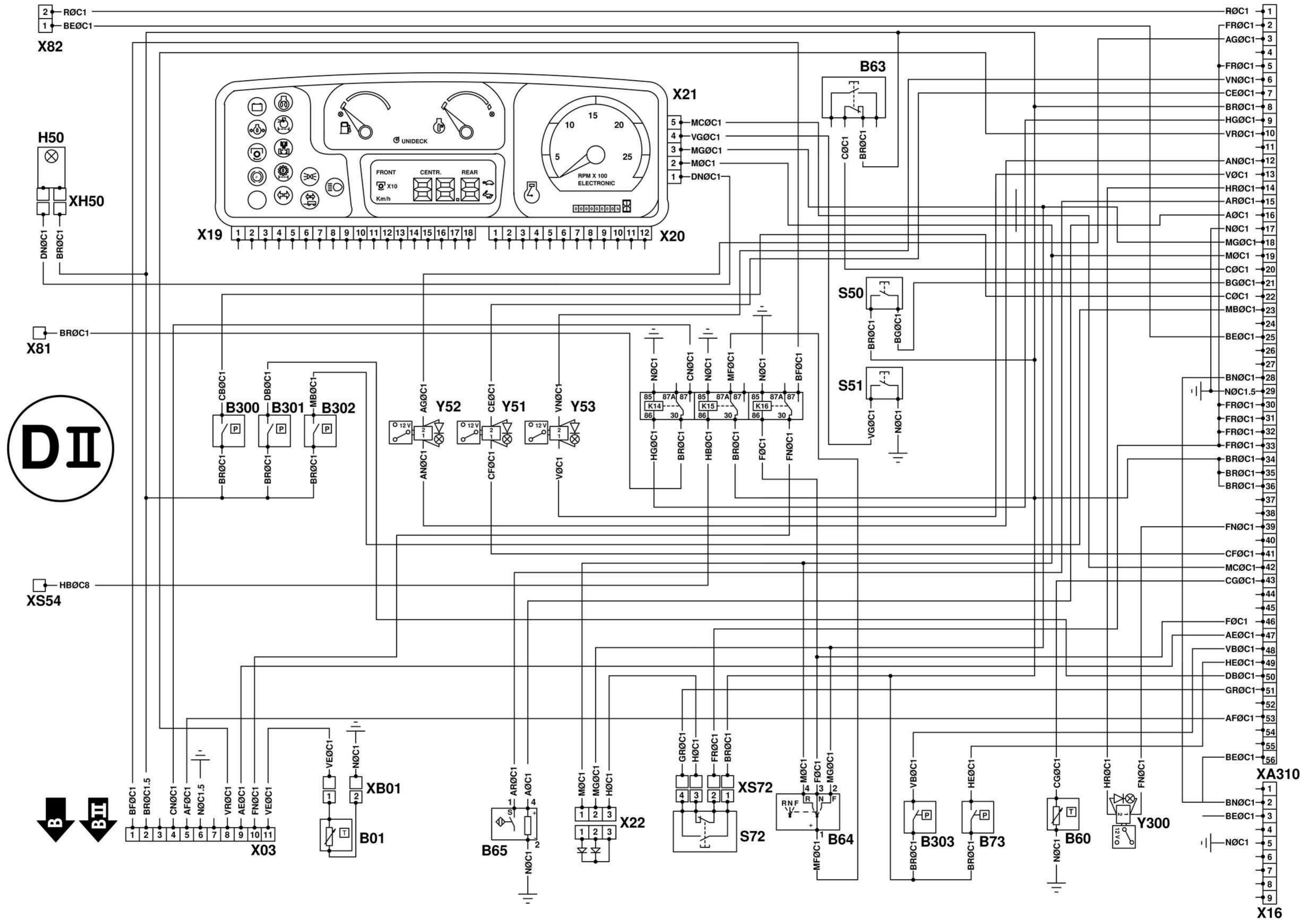
- [Y51 - Reverse Clutch Solenoid Valve \(EHM\)](#)
- [Y52 - Forward Low Clutch Solenoid Valve \(EHM\)](#)
- [Y53 - Forward High Clutch Solenoid Valve \(EHM\)](#)

For further information, see [Wiring Color Chart](#) in this group.

The following wiring harnesses are connected directly or indirectly to the wiring harness "D". See in this group:

- (A) - [Wiring Diagram "A" - Main Wiring Harness](#)
- (B) - [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- (B II) - [W16 - Fuse and Relay Box II Wiring Harness](#)
- (C) - [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- (D II) - [Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- (E) - [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)
- (F) - [Wiring Diagram "F" - Engine Wiring Harness](#)
- (G) - [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- (H) - [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)
- (I) - [Wiring Diagram "I" - Hood Wiring Harness](#)
- (L) - [Wiring Diagram "L" - Cab Wiring Harness](#)
- (M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)
- (N) - [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- (N II) - [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness (EHM II)



24/12-speed transmission wiring harness (EHM II) "D II"

LEGEND:

B01	Ambient temperature sensor
B60	Transmission oil temperature sensor
B63	High range/low range switch on transmission (EHM or EHM II)
B64	Reverse drive lever switch
B65	Clutch pedal potentiometer
B73	Oil filter restriction sensor (EHM or EHM II)
B300	Transmission oil pressure sensor of forward high clutch (EHM or EHM II)
B301	Transmission oil pressure sensor of forward low clutch (EHM or EHM II)
B302	Transmission oil pressure sensor of reverse clutch (EHM or EHM II)
B303	EHM II system pressure sensor
H50	Warning light (EHM or EHM II)
K14	Front-wheel drive relay (EHM or EHM II)
K15	Declutch relay (EHM or EHM II)
K16	Neutral start relay (EHM or EHM II)
S50	Calibration switch (EHM or EHM II)
S51	Calibration switch of digital instrument (EHM or EHM II)
S72	Clutch pedal switch (EHM or EHM II)
X03	11-pin connector for fuse box
X16	9-pin com-port for diagnostic connector (EHM or EHM II) to PC
X21	5-pin connector for instrument panel (EHM or EHM II)
X22	3-pin connector for diodes (EHM or EHM II)
X81	1-pin interconnection between wiring harnesses W02 and W03 II
X82	2-pin interconnections between wiring harnesses W02 and W03 II
XA310	56-pin connector for EHM II control panel A310
XB01	2-pin connector for ambient temperature sensor B01 (EHM or EHM II)
XH50	2-pin connector for warning light H50 (EHM or EHM II)
XS54	1-pin connector for declutch switch S54 (EHM or EHM II)
XS72	4/1-pin connectors for clutch pedal switch S72 (EHM or EHM II)
Y51	Reverse clutch solenoid valve (EHM or EHM II)
Y52	Forward low clutch solenoid valve (EHM or EHM II)
Y53	Forward high clutch solenoid valve (EHM or EHM II)
Y300	Shut-off solenoid valve (EHM or EHM II)

References: Component Information - Connectors

- [B01 - Ambient Temperature Sensor](#)
- [B60 - Transmission Oil Temperature Sensor](#)
- [B63 - High Range/Low Range Switch on Transmission \(EHM or EHM II\)](#)
- [B64 - Reverse Drive Lever Switch](#)
- [B65 - Clutch Pedal Potentiometer](#)
- [B73 - Oil Filter Restriction Sensor \(EHM or EHM II\)](#)
- [B300 - Transmission Oil Pressure Sensor of Forward High Clutch \(EHM or EHM II\)](#)
- [B301 - Transmission Oil Pressure Sensor of Forward Low Clutch \(EHM or EHM II\)](#)
- [B302 - Transmission Oil Pressure Sensor of Reverse Clutch \(EHM or EHM II\)](#)
- [B303 - EHM II System Pressure Sensor](#)

- [H50 - Warning Light \(EHM or EHM II\)](#)
- [K14 - Front-Wheel Drive Relay \(EHM or EHM II\)](#)
- [K15 - Declutch Relay \(EHM or EHM II\)](#)
- [K16 - Neutral Start Relay \(EHM or EHM II\)](#)

- [S50 - Calibration Switch \(EHM or EHM II\)](#)
- [S51 - Calibration Switch of Digital Instrument \(EHM or EHM II\)](#)
- [S72 - Clutch Pedal Switch \(EHM or EHM II\)](#)

- [X03 - 11-Pin Connector for Fuse Box](#)
- [X16 - 9-Pin Com-Port for Diagnostic Connector \(EHM\) to PC](#)
- [X21 - 5-Pin Connector for Instrument Panel](#)
- [X22 - 3-Pin Connector for Diodes](#)
- [X81 - 1-Pin Interconnection between Wiring Harnesses W02 and W03 II](#)
- [X82 - 2-Pin Interconnections between Wiring Harnesses W02 and W03 II](#)
- [XA310 - 56-Pin Connector for EHM II Control Panel A310](#)
- [XS54 - 1-Pin Connector for Declutch Switch S54](#)
- [XS72 - 4/1-Pin Connectors for Clutch Pedal Switch S72 \(EHM or EHM II\)](#)

- [Y51 - Reverse Clutch Solenoid Valve \(EHM or EHM II\)](#)
- [Y52 - Forward Low Clutch Solenoid Valve \(EHM or EHM II\)](#)
- [Y53 - Forward High Clutch Solenoid Valve \(EHM or EHM II\)](#)
- [Y300 - Shut-Off Solenoid Valve \(EHM or EHM II\)](#)

For further information, see [Wiring Color Chart](#) in this group.

The following wiring harnesses are connected directly or indirectly to the wiring harness "D II". See in this group:

- (A) - [Wiring Diagram "A" - Main Wiring Harness](#)
- (B) - [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- (B II) - [W16 - Fuse and Relay Box II Wiring Harness](#)
- (C) - [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- (D) - [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- (E) - [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)
- (F) - [Wiring Diagram "F" - Engine Wiring Harness](#)
- (G) - [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- (H) - [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)
- (I) - [Wiring Diagram "I" - Hood Wiring Harness](#)

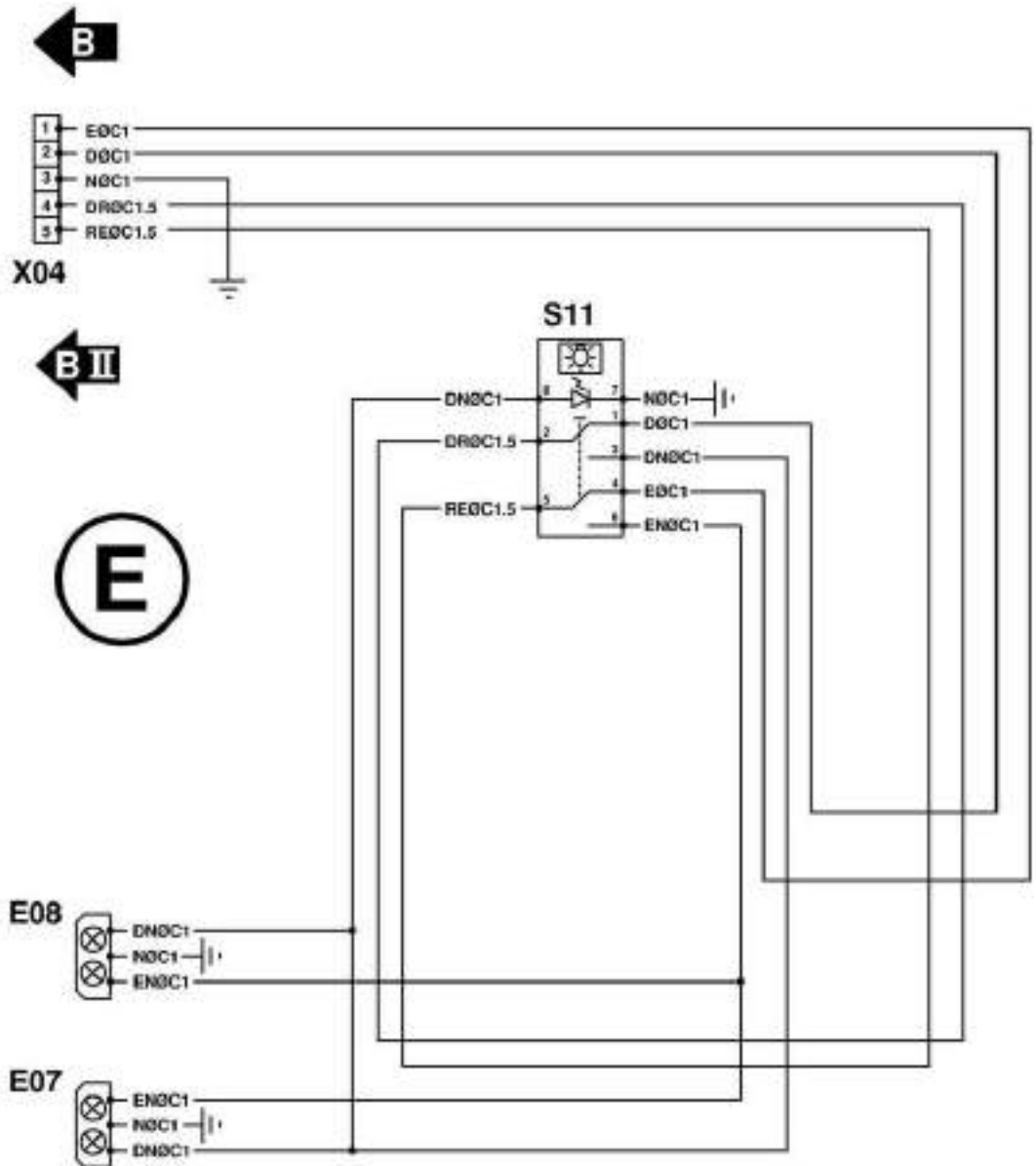
(L) - [Wiring Diagram "L" - Cab Wiring Harness](#)

(M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)

(N) - [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)

(N II) - [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Diagram "E" - H4 Farm Headlight Wiring Harness



AT15488

H4 farm headlight wiring harness "E"

LEGEND:

- E07 H4 farm headlight l.h.
- E08 H4 farm headlight r.h.
- S11 H4 farm headlight switch
- X04 5-pin connector for fuse box

References: Component Information - Connectors

- [E07 - H4 Farm Headlight l.h.](#)
- [E08 - H4 Farm Headlight r.h.](#)

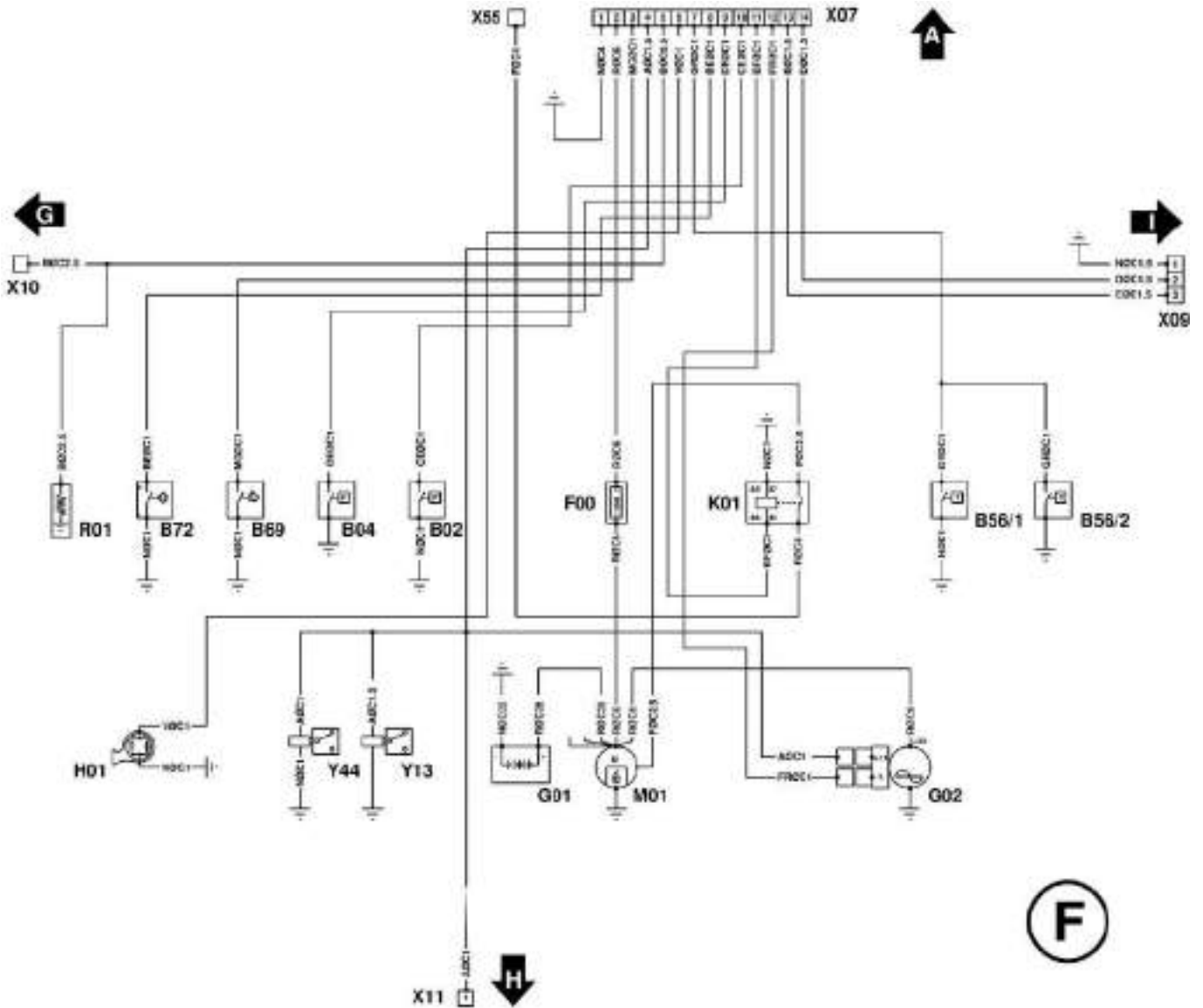
- [S11 - H4 Farm Headlight Switch](#)
- [X04 - 5-Pin Connector for Fuse Box](#)

For further information, see [Wiring Color Chart](#) in this group.

The following wiring harnesses are connected directly or indirectly to the H4 farm headlight wiring harness "E". See in this group:

- (A) - [Wiring Diagram "A" - Main Wiring Harness](#)
- (B) - [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- (B II) - [W16 - Fuse and Relay Box II Wiring Harness](#)
- (C) - [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- (D) - [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- (D II) - [Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- (F) - [Wiring Diagram "F" - Engine Wiring Harness](#)
- (G) - [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- (H) - [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)
- (I) - [Wiring Diagram "I" - Hood Wiring Harness](#)
- (L) - [Wiring Diagram "L" - Cab Wiring Harness](#)
- (M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)
- (N) - [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- (N II) - [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Diagram "F" - Engine Wiring Harness



F

AT17235

Engine wiring harness "F"

LEGEND:

- B02 Air filter restriction sensor
- B04 Engine oil pressure switch
- B56/1 Coolant temperature sensor (3-cylinder only)
- B56/2 Coolant temperature sensor (4-cylinder only)
- B69 Brake oil level sensor
- B72 Engine speed sensor
- F00 50 amp main fuse; main harness circuit
- G01 Battery
- G02 Alternator
- H01 Horn
- K01 Starter relay
- M01 Starter motor
- R01 Intake air heater (3-cyl.)

X07	14-pin interconnection between wiring harnesses W01 and W02
X09	3-pin interconnection between wiring harnesses W01 and W09
X10	1-pin interconnection between wiring harnesses W01 and W10
X11	1-pin interconnection between wiring harnesses W01 and W04
X55	1-pin interconnection between wiring harnesses W01 and W02

References: Component Information - Connectors

- [B02 - Air Filter Restriction Sensor](#)
- [B03 - Fuel Level Sensor](#)
- [B56/1 - Coolant Temperature Sensor \(3-Cylinder only\)](#)
- [B56/2 - Coolant Temperature Sensor \(4-Cylinder only\)](#)
- [B69 - Brake Oil Level sensor](#)
- [B72 - Engine Speed Sensor](#)

- [F00 - Main Fuse for Main Wiring Circuit](#)

- [G01 - Battery](#)
- [G02 - Alternator](#)

- [H01 - Horn](#)

- [K01 - Starter Relay](#)

- [M01 - Starter Motor](#)

- [R01 - Intake Air Heater \(3-Cyl.\)](#)

- [X07 - 14-Pin Interconnection between Wiring Harnesses W01 and W02](#)
- [X09 - 3-Pin Interconnection between Wiring Harnesses W01 and W09](#)
- [X10 - 1-Pin Interconnection between Wiring Harnesses W01 and W10](#)
- [X11 - 1-Pin Interconnection between Wiring Harnesses W01 and W04](#)

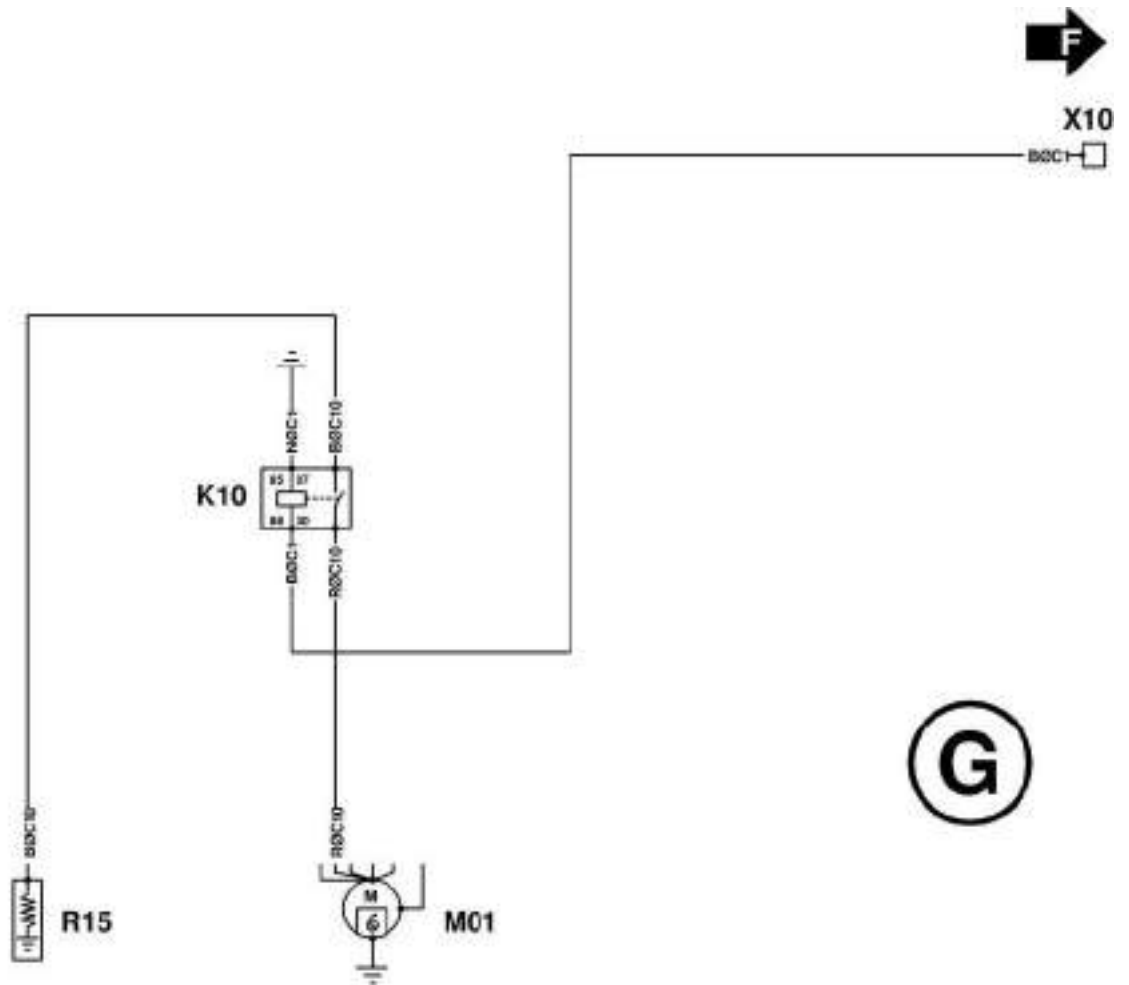
For further information, see [Wiring Color Chart](#) in this group.

The following wiring harnesses are connected directly or indirectly to the engine wiring harness "F". See in this group:

- (A) - [Wiring Diagram "A" - Main Wiring Harness](#)
- (B) - [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- (B II) - [W16 - Fuse and Relay Box II Wiring Harness](#)
- (C) - [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- (D) - [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- (D II) - [Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)

- (E) - [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)
- (G) - [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- (H) - [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)
- (I) - [Wiring Diagram "I" - Hood Wiring Harness](#)
- (L) - [Wiring Diagram "L" - Cab Wiring Harness](#)
- (M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)
- (N) - [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- (N II) - [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness



AT15490

Fuel Pre-Heater and Intake Air Heater Wiring Harness "G"

LEGEND:

- K10 Intake air heater relay
- M01 Starter motor
- R15 Intake air heater (4-cyl.)
- X10 1-pin interconnection between wiring harnesses W01 and W10

References: Component Information - Connectors

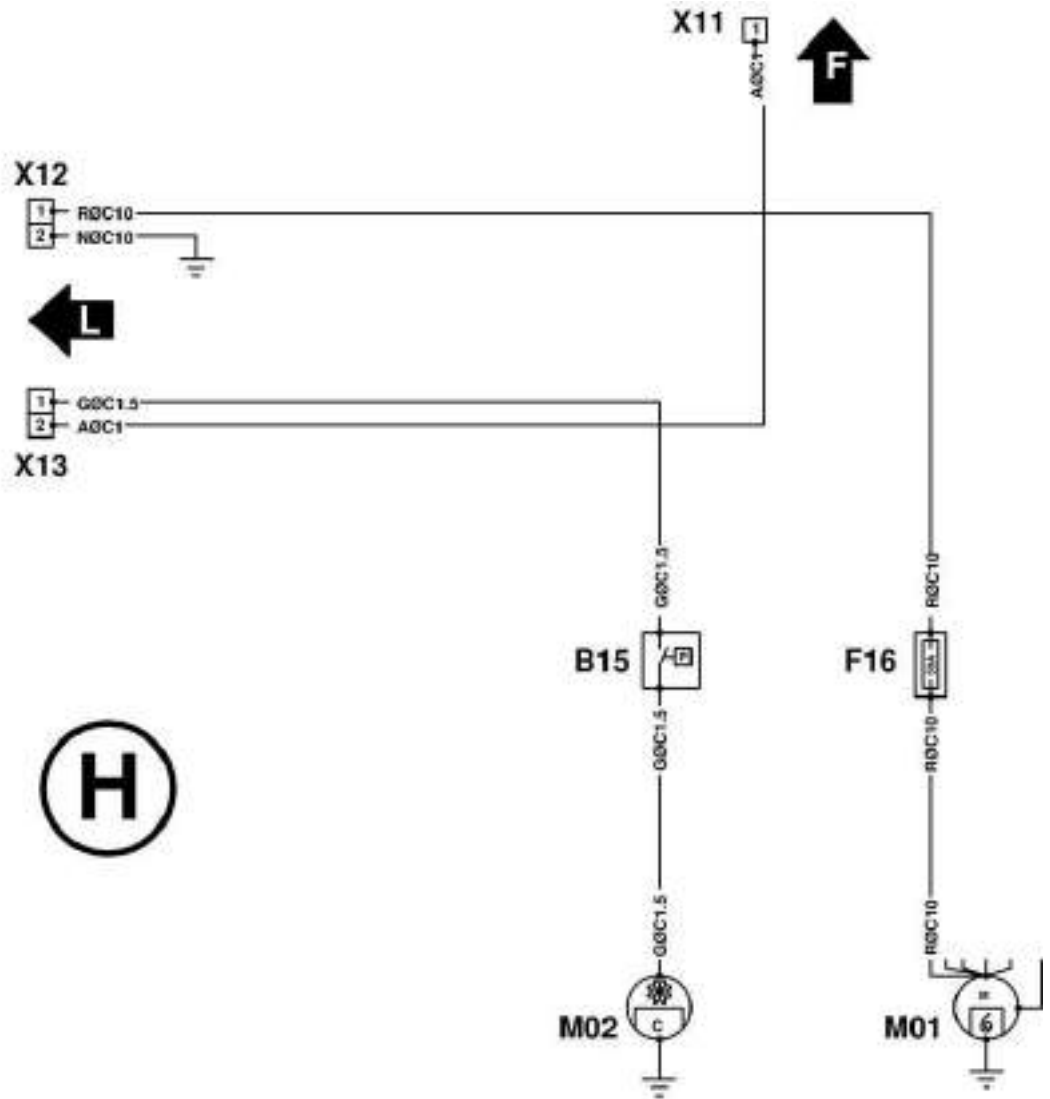
- [K10 - Intake Air Heater Relay](#)
- [M01 - Starter Motor](#)
- [R15 - Intake Air Heater \(4-Cyl.\)](#)
- [X10 - 1-Pin Interconnection between Wiring Harnesses W01 and W10](#)

For further information, see [Wiring Color Chart](#) in this group.

The following wiring harnesses are connected directly or indirectly to the fuel pre-heater and intake air heater wiring harness "G". See in this group:

- (A) - [Wiring Diagram "A" - Main Wiring Harness](#)
- (B) - [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- (B II) - [W16 - Fuse and Relay Box II Wiring Harness](#)
- (C) - [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- (D) - [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- (D II) - [Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- (E) - [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)
- (F) - [Wiring Diagram "F" - Engine Wiring Harness](#)
- (H) - [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)
- (I) - [Wiring Diagram "I" - Hood Wiring Harness](#)
- (L) - [Wiring Diagram "L" - Cab Wiring Harness](#)
- (M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)
- (N) - [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- (N II) - [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Diagram "H" - Engine/Cab Wiring Harness



AT15491

Cab wiring harness "H" (connection to engine)

LEGEND:

- B15 Air-conditioning pressure switch
- F16 50 amp main fuse; cab harness circuit
- M01 Starter motor
- M02 Air-conditioning compressor clutch
- X11 1-pin interconnection between wiring harnesses W01 and W04
- X12 2-pin interconnection between wiring harnesses W04 and W05
- X13 2-pin interconnection between wiring harnesses W04 and W05 (air-conditioning system)

References: Component Information - Connectors

- [B15 - Air-Conditioning Pressure Switch](#)
- [F16 - Main Fuse for Cab Wiring Circuit](#)

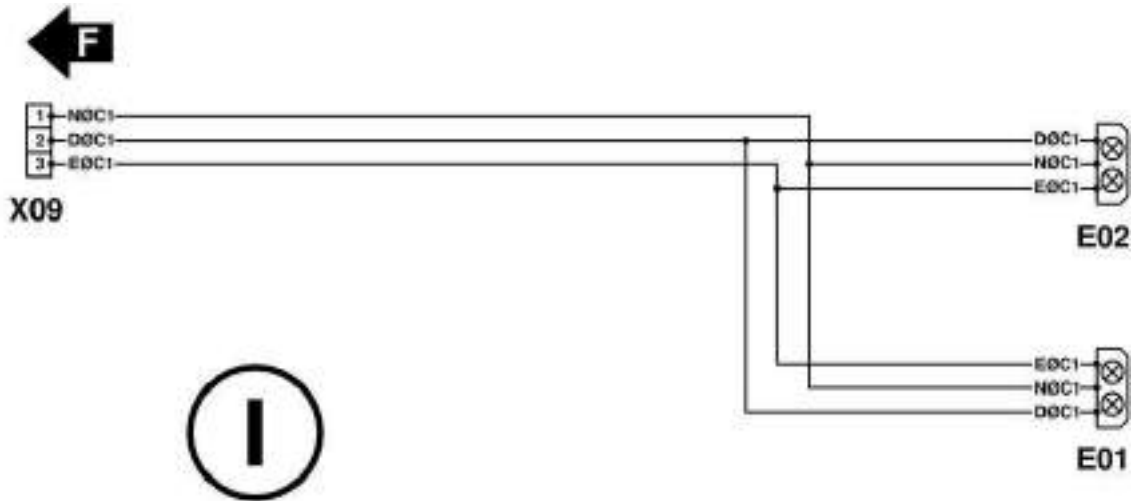
- [M01 - Starter Motor](#)
- [M02 - Air-Conditioning Compressor Clutch](#)
- [X01 - 21-Pin Connector for Fuse Box \(White\)](#)
- [X11 - 1-Pin Interconnection between Wiring Harnesses W01 and W04](#)
- [X12 - 2-Pin Interconnection between Wiring Harnesses W04 and W05](#)
- [X13 - 2-Pin Interconnection between Wiring Harnesses W04 and W05 \(Air-Conditioning System\)](#)

For further information, see [Wiring Color Chart](#) in this group.

The following wiring harnesses are connected directly or indirectly to the engine/cab wiring harness "H". See in this group:

- (A) - [Wiring Diagram "A" - Main Wiring Harness](#)
- (B) - [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- (B II) - [W16 - Fuse and Relay Box II Wiring Harness](#)
- (C) - [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- (D) - [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- (D II) - [Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- (E) - [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)
- (F) - [Wiring Diagram "F" - Engine Wiring Harness](#)
- (G) - [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- (I) - [Wiring Diagram "I" - Hood Wiring Harness](#)
- (L) - [Wiring Diagram "L" - Cab Wiring Harness](#)
- (M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)
- (N) - [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- (N II) - [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Diagram "I" - Hood Wiring Harness



AT15492

Hood wiring harness "I"

LEGEND:

- E01 H4 headlight r.h.
- E02 H4 headlight l.h.
- X09 3-pin interconnection between wiring harnesses W01 and W09

References: Component Information - Connectors

- [E01 - H4 Headlight r.h.](#)
- [E02 - H4 Headlight l.h.](#)
- [X09 - 3-Pin Interconnection between Wiring Harnesses W01 and W09](#)

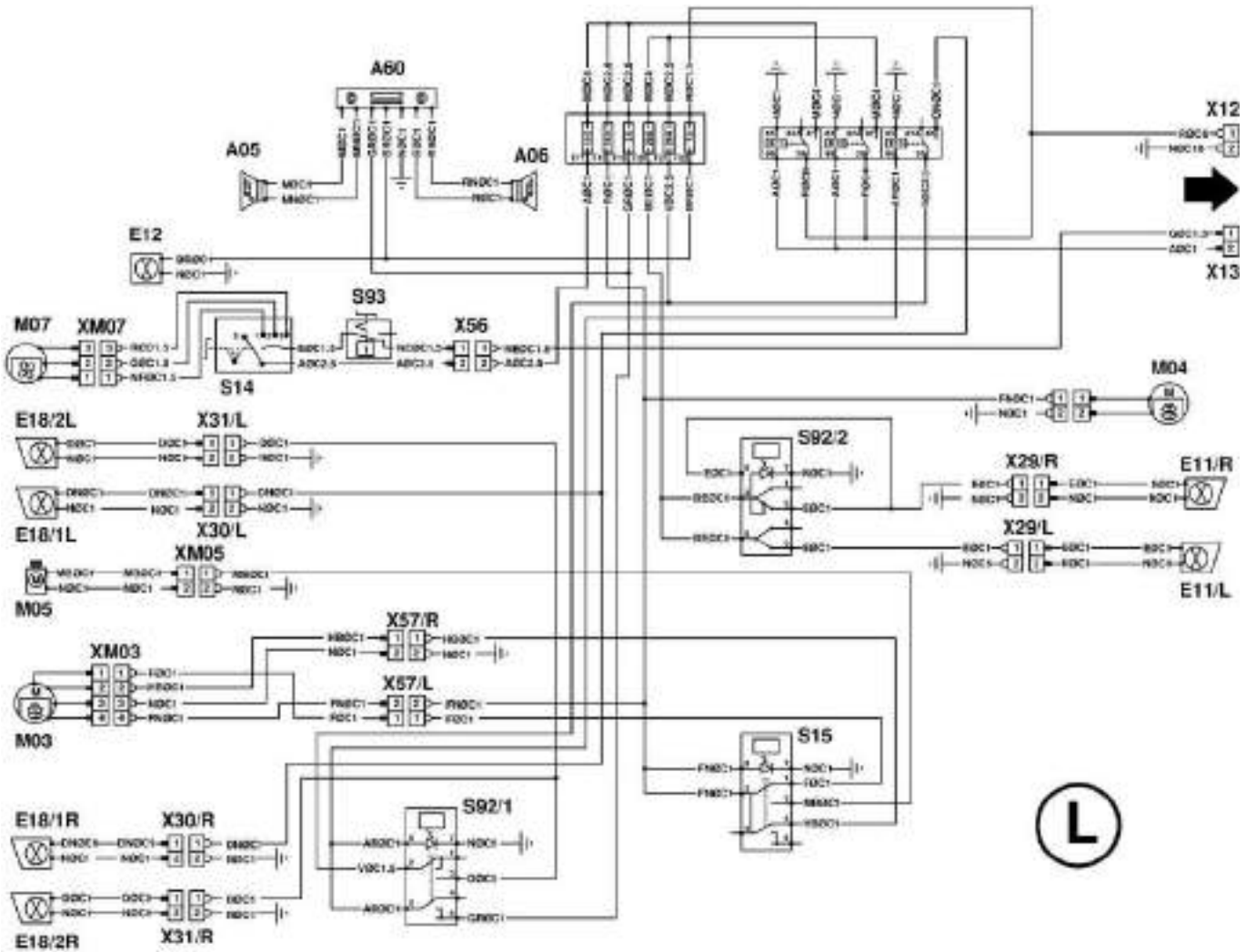
For further information, see [Wiring Color Chart](#) in this group.

The following wiring harnesses are connected directly or indirectly to the hood wiring harness "I". See in this group:

- (A) - [Wiring Diagram "A" - Main Wiring Harness](#)
- (B) - [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- (B II) - [W16 - Fuse and Relay Box II Wiring Harness](#)
- (C) - [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- (D) - [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)

- (D II) - [Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- (E) - [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)
- (F) - [Wiring Diagram "F" - Engine Wiring Harness](#)
- (G) - [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- (H) - [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)
- (L) - [Wiring Diagram "L" - Cab Wiring Harness](#)
- (M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)
- (N) - [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- (N II) - [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Diagram "L" - Cab Wiring Harness



AT17255

Cab wiring harness "L"

LEGEND:

- A05 Loudspeaker r.h.
- A06 Loudspeaker l.h.
- A60 Radio
- E11/L Rear work light l.h.
- E11/R Rear work light r.h.
- E12 Dome light
- E18/2L Front work light l.h. (outer)
- E18/2R Front work light r.h. (outer)
- F17 20 amp fuse; 3-speed switch (fan/air-conditioning)
- F18 15 amp fuse; Front and rear wiper/washer system
- F19 5 amp fuse; Front work light indicator and radio +15
- F20 15 amp fuse; Rear work lights
- F21 20 amp fuse; Front work lights
- F22 5 amp fuse; Dome light and radio +30
- K11 Relay of fan motor (tractors with cab)

K12	Rear work light relay (tractors with cab)
K13	Front work light relay (tractors with cab)
M03	Front wiper motor
M04	Rear wiper motor with switch
M05	Pump of washer system
M07	Fan motor
S14	Fan switch
S15	Switch for windshield wiper and pump of washer system
S92/1	Front work light switch
S92/2	Rear work light switch
S93	Heating and air-conditioning switch
X12	2-pin interconnection between wiring harnesses W04 and W05
X13	2-pin interconnection between wiring harnesses W04 and W05 (air-conditioning system)
X29/L	2-pin interconnection between wiring harnesses W05 and W06/1L
X29/R	2-pin interconnection between wiring harnesses W05 and W06/1R
X30/L	Not used
X30/R	Not used
X31/L	2-pin interconnection between wiring harnesses W05 and W06/3L (outer)
X31/R	2-pin interconnection between wiring harnesses W05 and W06/3R (outer)
X56	2/1-pin interconnections between W14 and W05
X57/L	2-pin interconnections between wiring harnesses W05 and W15
X57/R	2-pin interconnections between wiring harnesses W05 and W15
XM03	4-pin connector for front wiper motor M03
XM05	2-pin connector for pump of washer system M05
XM07	3/1-pin connectors for fan motor M07

References: Component Information - Connectors

- [E11/L - Rear Work Light l.h.](#)
- [E11/R - Rear Work Light r.h.](#)
- [E12 - Dome Light](#)
- [E18/2L - Front Work Light l.h. \(outer\)](#)
- [E18/2R - Front Work Light r.h. \(outer\)](#)
- [F17 to F22 - Cab Fuse Box](#)
- [K11 - Relay of Fan Motor \(Tractors with Cab\)](#)
- [K12 - Rear Work Light Relay \(Tractors with Cab\)](#)
- [K13 - Front Work Light Relay \(Tractors with Cab\)](#)
- [M03 - Front Wiper Motor](#)
- [M04 - Rear Wiper Motor with Switch](#)
- [M05 - Pump of Washer System](#)
- [M07 - Fan Motor](#)
- [S14 - Fan Switch](#)
- [S15 - Switch for Windshield Wiper and Pump of Washer System](#)

- [S92/1 - Front Work Light Switch](#)
- [S92/2 - Rear Work Light Switch](#)
- [S93 - Heating and Air-Conditioning Switch](#)

- [X12 - 2-Pin Interconnection between Wiring Harnesses W04 and W05](#)
- [X13 - 2-Pin Interconnection between Wiring Harnesses W04 and W05 \(Air-Conditioning System\)](#)
- [X29/L - 2-Pin Interconnection between Wiring Harnesses W05 and W06/1L](#)
- [X29/R - 2-Pin Interconnection between Wiring Harnesses W05 and W06/1R](#)
- [X30/L - 2-Pin Interconnection between Wiring Harnesses W05 and W06/2L \(Inner\)](#)
- [X30/R - 2-Pin Interconnection between Wiring Harnesses W05 and W06/2R \(Inner\)](#)
- [X31/L - 2-Pin Interconnection between Wiring Harnesses W05 and W06/3L \(Outer\)](#)
- [X31/R - 2-Pin Interconnection between Wiring Harnesses W05 and W06/3R \(Outer\)](#)
- [X56 - 2/1-Pin Interconnections between Wiring Harnesses W05 and W14](#)
- [X57/L - 2-Pin Interconnections between Wiring Harnesses W05 and W15](#)
- [X57/R - 2-Pin Interconnections between Wiring Harnesses W05 and W15](#)
- [XM03 - 4-Pin Connector for Front Wiper Motor M03](#)
- [XM05 - 2-Pin Connector for Pump of Washer System M05](#)
- [XM07 - 3/1-Pin Connectors for Fan Motor M07](#)

For further information, see [Wiring Color Chart](#) in this group.

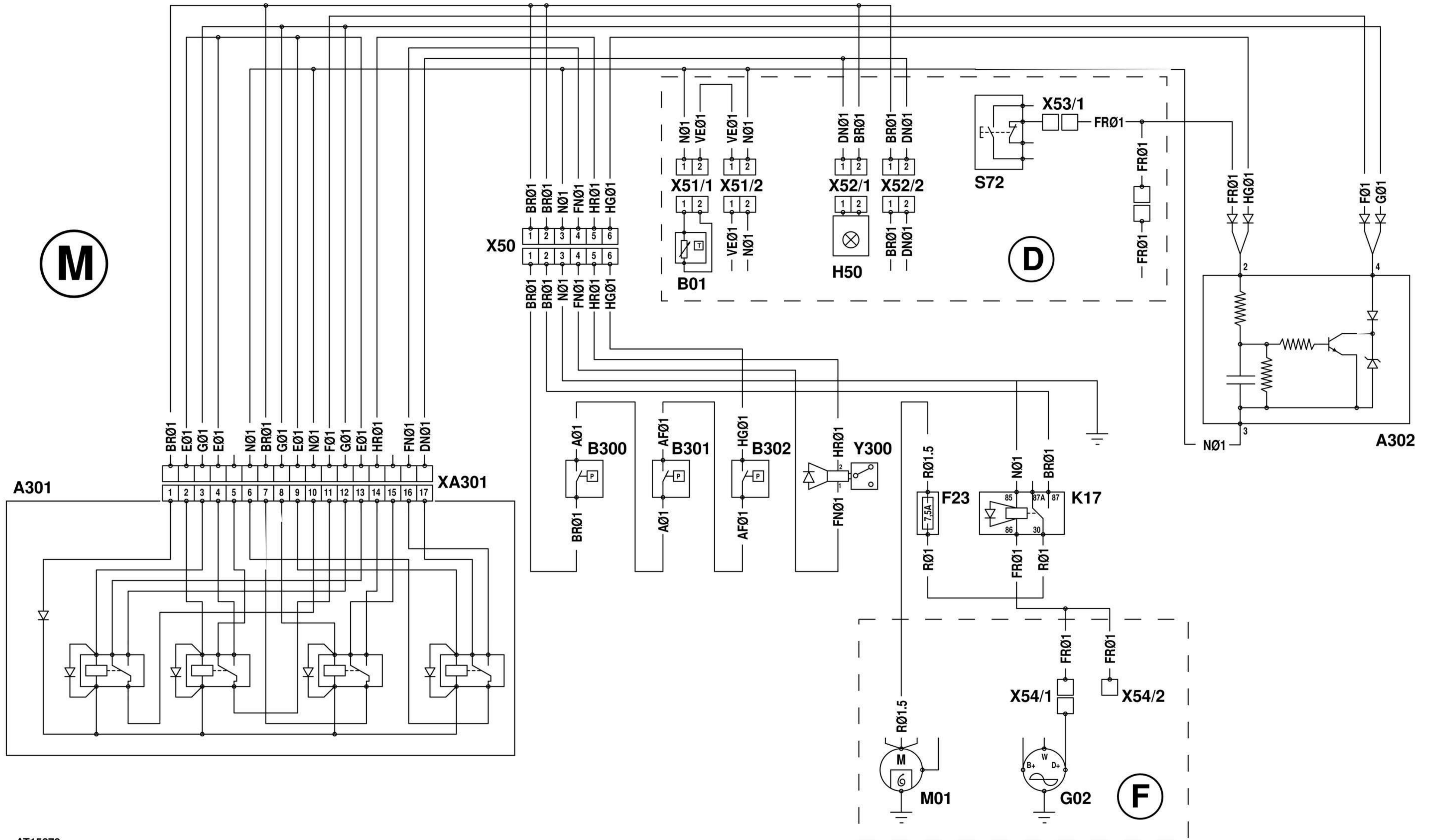
The following wiring harnesses are connected directly or indirectly to the cab wiring harness "L". See in this group:

- (A) - [Wiring Diagram "A" - Main Wiring Harness](#)
- (B) - [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- (B II) - [W16 - Fuse and Relay Box II Wiring Harness](#)
- (C) - [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- (D) - [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- (D II) - [Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- (E) - [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)
- (F) - [Wiring Diagram "F" - Engine Wiring Harness](#)
- (G) - [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- (H) - [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)
- (I) - [Wiring Diagram "I" - Hood Wiring Harness](#)
- (M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)

(N) - [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)

(N II) - [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Diagram "M" - Shut-Off System Wiring Harness (EHM)



*Shut-off system wiring harness (EHM) "M"***LEGEND:**

A301	Relay box of shut-off system (EHM)
A302	Time-delay switch of shut-off system (EHM)
B01	Ambient temperature sensor (EHM or EHM II)
B300	Transmission oil pressure sensor of forward high clutch (EHM or EHM II)
B301	Transmission oil pressure sensor of forward low clutch (EHM or EHM II)
B302	Transmission oil pressure sensor of reverse clutch (EHM or EHM II)
D	Connections to wiring diagram "D"
F	Connections to wiring diagram "F"
F23	7.5 amp fuse for shut-off system circuit (EHM)
G02	Alternator
H50	Warning light (EHM or EHM II)
K17	Relay of shut-off system (EHM)
M01	Starter motor
S72	Clutch pedal switch (EHM or EHM II)
X50	6-pin interconnection between wiring harnesses W12/1 and W12/2
X51/1	2-pin interconnection to ground between wiring harnesses W03 and W12
X51/2	2-pin interconnection to ground between wiring harnesses W03 and W12
X52/1	2-pin interconnection between warning light H50 (EHM) and wiring harness W12
X52/2	2-pin interconnection between warning light H50 (EHM) and wiring harness W12
X53/1	1-pin interconnection between clutch pedal switch S72 (EHM) and wiring harness W12
X53/2	1-pin interconnection between clutch pedal switch S72 (EHM) and wiring harness W12
X54/1	1-pin interconnection between alternator G02 and wiring harness W12
X54/2	1-pin interconnection between alternator G02 and wiring harness W12
XA301	17-pin connector for relay box A301 (EHM)
Y300	Shut-off solenoid valve (EHM or EHM II)

References: Component Information - Connectors

- [A301 - Relay Box \(EHM\)](#)
- [A302 - Time-Delay Switch \(EHM\)](#)
- [B01 - Ambient Temperature Sensor \(EHM or EHM II\)](#)
- [B300 - Transmission Oil Pressure Sensor of Forward High Clutch \(EHM or EHM II\)](#)
- [B301 - Transmission Oil Pressure Sensor of Forward Low Clutch \(EHM or EHM II\)](#)
- [B302 - Transmission Oil Pressure Sensor of Reverse Clutch \(EHM or EHM II\)](#)
- [F23 - Fuse of Shut-Off System Circuit \(EHM\)](#)
- [G02 - Alternator](#)
- [H50 - Warning Light \(EHM or EHM II\)](#)

- [K17 - Relay of Shut-Off System \(EHM\)](#)
- [M01 - Starter Motor](#)
- [X50 - 6-Pin Interconnection between Wiring Harnesses W12/1 and W12/2](#)
- [X51 - 2/2-Pin Interconnections to Ground between Wiring Harnesses W03 and W12](#)
- [X52 - 2/2-Pin Interconnections between Warning Light H50 \(EHM\) and Wiring Harness W12](#)
- [X53 - 2/1-Pin Interconnections between Clutch Pedal Switch S72 \(EHM\) and Wiring Harness W12](#)
- [X54 - 2/1-Pin Interconnections between Alternator G02 and Wiring Harness W12](#)
- [XA301 - 17-Pin Connector for Relay Box A301 \(EHM\)](#)
- [Y300 - Shut-Off Solenoid Valve \(EHM or EHM II\)](#)

For further information, see [Wiring Color Chart](#) in this group.

The following wiring harnesses are connected directly or indirectly to the shut-off system wiring harness (EHM) "M". See in this group:

- (A) - [Wiring Diagram "A" - Main Wiring Harness](#)
- (B) - [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- (B II) - [W16 - Fuse and Relay Box II Wiring Harness](#)
- (C) - [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- (D) - [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- (E) - [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)
- (F) - [Wiring Diagram "F" - Engine Wiring Harness](#)
- (G) - [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- (H) - [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)
- (I) - [Wiring Diagram "I" - Hood Wiring Harness](#)
- (L) - [Wiring Diagram "L" - Cab Wiring Harness](#)
- (M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)
- (N) - [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)
- (N II) - [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness (EHS)

*Electronic hitch sensing wiring harness (EHS or EHS II)***LEGEND:**

A200	EHS control panel
B200	Position sensor (EHS)
B201	Draft sensor (EHS)
F24	20 amp fuse for electronic hitch sensing circuit (EHS)
G02	Alternator +15
K18	Relay of electronic hitch sensing (EHS)
M01	Starter motor (EHS)
S68	Hitch remote control switch (EHS)
S200	Raise limiting switch (EHS)
S201	Raise/lower switch (EHS)
X41/1	4-pin connector on wiring harness W11/1 (EHS)
X41/2	4-pin connector on wiring harness W11/2 (EHS)
X42	3-pin connector for diagnostic (EHS) to PC
X43/1	1-pin interconnection between relay K18 and alternator G02 (+15)
X43/2	1-pin interconnection between relay K18 and alternator G02 (+15)
XA200	12-pin interconnection between EHS control panel A200 and W11 (EHS)
XB200	3-pin connector for position sensor B200 (EHS)
XB201	3-pin connector for draft sensor B201 (EHS)
XS68	6-pin connector for hitch remote control switch S68 (EHS)
XS200	2-pin connector for raise limiting switch S200 (EHS)
XS201	3-pin connector for raise/lower switch S201 (EHS)
XY200	4-pin connector for raise solenoid valve Y200 (EHS)
XY201	4-pin connector for lower solenoid valve Y201 (EHS)
Y200	Raise solenoid valve (EHS)
Y201	Lower solenoid valve (EHS)

References: Component Information - Connectors

- [A200 - EHS Control Panel](#)
- [B200 - Position Sensor \(EHS\)](#)
- [B201 - Draft Sensor \(EHS\)](#)
- [F24 - Fuse for Electronic Hitch Sensing Circuit \(EHS\)](#)
- [G02 - Alternator](#)
- [K18 - Relay of Electronic Hitch Sensing \(EHS\)](#)
- [M01 - Starter Motor](#)
- [S68 - Hitch Remote Control Switch \(EHS\)](#)
- [S200 - Raise Limiting Switch \(EHS\)](#)
- [S201 - Raise/Lower Switch \(EHS\)](#)
- [X41 - 4-Pin Interconnection between Wiring Harnesses W11/1 and W11/2 \(EHS\)](#)
- [X42 - 3-Pin Diagnostic Connector \(EHS\) to PC](#)

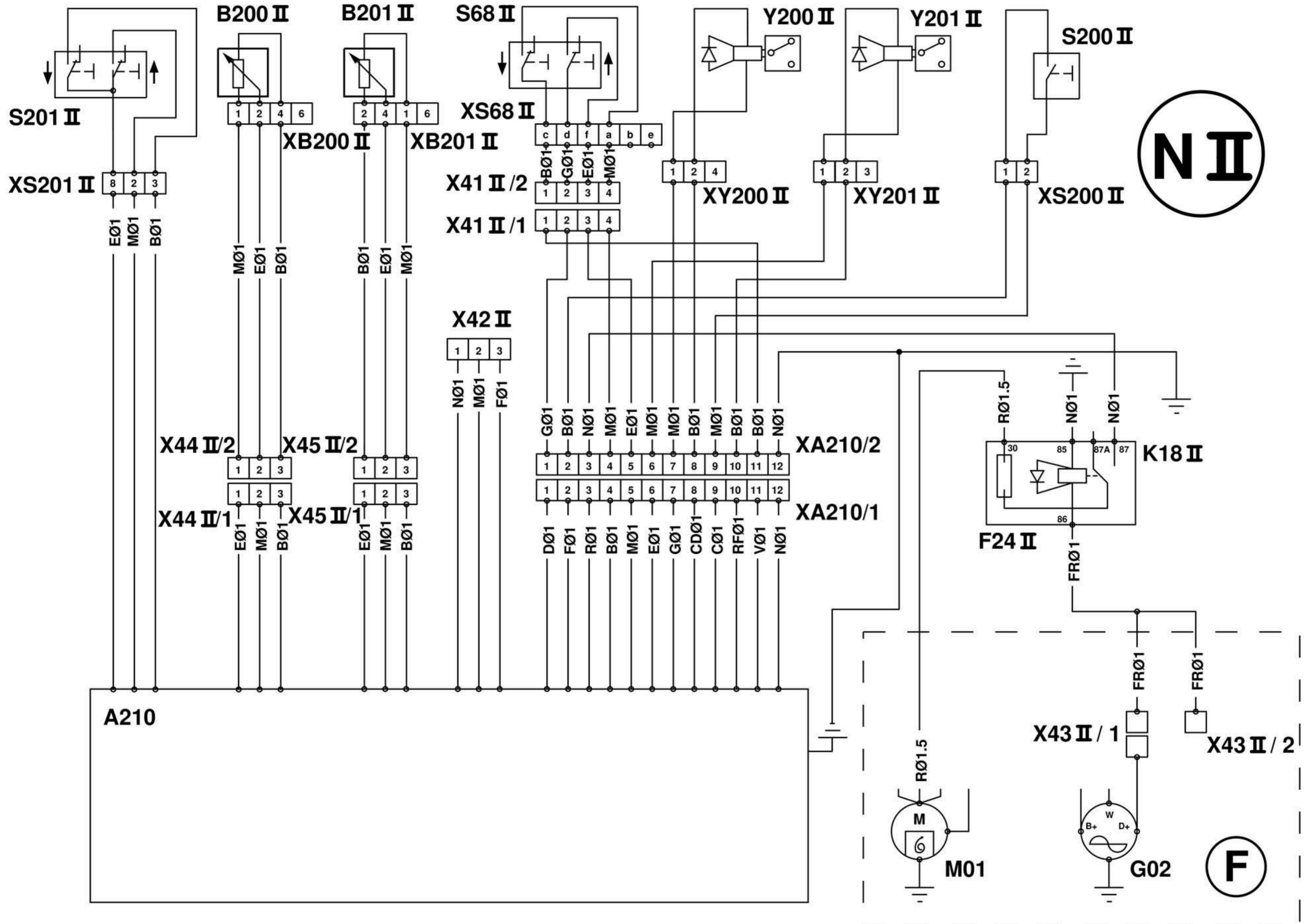
- [X43 - 2/1-Pin Interconnections between Relay K18 and Alternator G02 \(+15\)](#)
- [XA200 - Connector for EHS Control Panel A200](#)
- [XB200 - 3-Pin Connector for Position Sensor B200 \(EHS\)](#)
- [XB201 - 3-Pin Connector for Draft Sensor B201 \(EHS\)](#)
- [XS68 - 6-Pin Connector for Hitch Remote Control Switch S68 \(EHS\)](#)
- [XS200 - 2-Pin Connector for Raise Limiting Switch S200 \(EHS\)](#)
- [XS201 - 3-Pin Connector for Raise/Lower Switch S201 \(EHS\)](#)
- [XY200 - 4-Pin Connector for Raise Solenoid Valve Y200 \(EHS\)](#)
- [XY201 - 4-Pin Connector for Lower Solenoid Valve Y201 \(EHS XY300 - 2-Pin Connector for Shut-Off Solenoid Valve Y300 \(EHM or EHM II\)](#)
- [Y200 - Raise Solenoid Valve \(EHS\)](#)
- [Y201 - Lower Solenoid Valve \(EHS\)](#)

For further information, see [Wiring Color Chart](#) in this group.

The following wiring harnesses are connected directly or indirectly to the electronic hitch sensing wiring harness (EHS) "N". See in this group:

- (A) - [Wiring Diagram "A" - Main Wiring Harness](#)
- (B) - [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- (B II) - [W16 - Fuse and Relay Box II Wiring Harness](#)
- (C) - [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- (D) - [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- (D II) - [Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- (E) - [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)
- (F) - [Wiring Diagram "F" - Engine Wiring Harness](#)
- (G) - [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- (H) - [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)
- (I) - [Wiring Diagram "I" - Hood Wiring Harness](#)
- (L) - [Wiring Diagram "L" - Cab Wiring Harness](#)
- (M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)
- (N II) - [Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness \(EHS II\)](#)

Wiring Diagram "N II" - Electronic Hitch Sensing Wiring Harness (EHS II)



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Electronic hitch sensing wiring harness (EHS II)

LEGEND:

A210	EHS II control panel
B200 II	Position sensor (EHS II)
B201 II	Draft sensor (EHS II)
F24 II	20 amp fuse for electronic hitch sensing circuit (EHS II)
G02	Alternator +15
K18 II	Relay of electronic hitch sensing (EHS II)
M01	Starter motor
S68 II	Hitch remote control switch (EHS II)
S200 II	Raise limiting switch (EHS II)
S201 II	Raise/lower switch (EHS II)
X41 II/1	4-pin connector on wiring harness W11 II/1 (EHS II)
X41 II/2	4-pin connector on wiring harness W11 II/2 (EHS II)
X42 II	3-pin connector for diagnostic (EHS II) to PC
X43 II/1	1-pin interconnection between relay K18 II and alternator G02 (+15)
X43 II/2	1-pin interconnection between relay K18 II and alternator G02 (+15)
X44 II/1	3-pin connector on EHS II control panel A210
X44 II/2	3-pin connector on wiring harness W11 II/3 (EHS II)
X45 II/1	3-pin connector on EHS II control panel A210
X45 II/2	3-pin connector on wiring harness W11 II/4 (EHS II)
XA210	12-pin interconnection between EHS II Control Panel A210 and W11 II (EHS II)
XB200 II	3-pin connector for position sensor B200 II (EHS II)
XB201 II	3-pin connector for draft sensor B201 II (EHS II)
XS68 II	6-pin connector for hitch remote control switch S68 II (EHS II)
XS200 II	2-pin connector for raise limiting switch S200 II (EHS II)
XS201 II	3-pin connector for raise/lower switch S201 II (EHS II)
XY200 II	4-pin connector for raise solenoid valve Y200 II (EHS II)
XY201 II	3-pin connector for lower solenoid valve Y201 II (EHS II)
Y200 II	Raise solenoid valve (EHS II)
Y201 II	Lower solenoid valve (EHS II)

References: Component Information - Connectors

- [A210 - EHS II Control Panel](#)
- [B200 II - Position Sensor \(EHS II\)](#)
- [B201 II - Draft Sensor \(EHS II\)](#)
- [F24 II - Fuse for Electronic Hitch Sensing Circuit \(EHS II\)](#)
- [G02 - Alternator](#)
- [K18 II - Relay of Electronic Hitch Sensing \(EHS II\)](#)
- [M01 - Starter Motor](#)
- [S68 II - Hitch Remote Control Switch \(EHS II\)](#)
- [S200 II - Raise Limiting Switch \(EHS II\)](#)

- [S201 II - Raise/Lower Switch \(EHS II\)](#)
- [X41 II - 4-Pin Interconnection between Wiring Harnesses W11 II/1 and W11 II/2 \(EHS II\)](#)
- [X42 II - 3-Pin Connector for Diagnostic \(EHS II\) to PC](#)
- [X43 II - 2/1-Pin Interconnections between Relay K18 II and Alternator G02 \(+15\)](#)
- [X44 II - 3-Pin Interconnection between EHS II Control Panel A210 and Adapter Wiring Harness W11/3 \(EHS II\)](#)
- [X45 II - 3-Pin Interconnection between EHS II Control Panel A210 and Adapter Wiring Harness W11/4 \(EHS II\)](#)
- [XA210 - 12-Pin Interconnection between EHS II Control Panel A210 and W11 II \(EHS II\)](#)
- [XB200 II - 3-Pin Connector for Position Sensor B200 II \(EHS II\)](#)
- [XB201 II - 3-Pin Connector for Draft Sensor B201 II \(EHS II\)](#)
- [XS68 II - 6-Pin Connector for Hitch Remote Control Switch S68 II \(EHS II\)](#)
- [XS200 II - 2-Pin Connector for Raise Limiting Switch S200 II \(EHS II\)](#)
- [XS201 II - 3-Pin Connector for Raise/Lower Switch S201 II \(EHS II\)](#)
- [XY200 II - 4-Pin Connector for Raise Solenoid Valve Y200 II \(EHS II\)](#)
- [XY201 II - 3-Pin Connector for Lower Solenoid Valve Y201 II \(EHS II\)](#)
- [Y200 II - Raise Solenoid Valve \(EHS II\)](#)
- [Y201 II - Lower Solenoid Valve \(EHS II\)](#)

For further information, see [Wiring Color Chart](#) in this group.

The following wiring harnesses are connected directly or indirectly to the electronic hitch sensing wiring harness (EHS II) "N II". See in this group:

- (A) - [Wiring Diagram "A" - Main Wiring Harness](#)
- (B) - [Wiring Diagram "B" - Fuse Box Wiring Harness](#)
- (B II) - [W16 - Fuse and Relay Box II Wiring Harness](#)
- (C) - [Wiring Diagram "C" - Trailer Brake Valve Wiring Harness](#)
- (D) - [Wiring Diagram "D" - 24/12-Speed Transmission Wiring Harness \(EHM\)](#)
- (D II) - [Wiring Diagram "D II" - 24/12-Speed Transmission Wiring Harness \(EHM II\)](#)
- (E) - [Wiring Diagram "E" - H4 Farm Headlight Wiring Harness](#)
- (F) - [Wiring Diagram "F" - Engine Wiring Harness](#)
- (G) - [Wiring Diagram "G" - Fuel Pre-Heater and Intake Air Heater Wiring Harness](#)
- (H) - [Wiring Diagram "H" - Engine/Cab Wiring Harness](#)

(I) - [Wiring Diagram "I" - Hood Wiring Harness](#)

(L) - [Wiring Diagram "L" - Cab Wiring Harness](#)

(M) - [Wiring Diagram "M" - Shut-Off System Wiring Harness \(EHM\)](#)

(N) - [Wiring Diagram "N" - Electronic Hitch Sensing Wiring Harness \(EHS\)](#)