

Machine Harness Connector and Component Locations

E52851

| Component Location                |                    |                  |                                              |                    |                  |
|-----------------------------------|--------------------|------------------|----------------------------------------------|--------------------|------------------|
| Component                         | Schematic Location | Machine Location | Component                                    | Schematic Location | Machine Location |
| Action Lamps                      | G-6                | A                | Resistor - Rear Window Defrost               | F-8                | 22               |
| Alarm - Backup                    | E-11               | 9                | Sender - Fuel Level                          | E-8                | 7                |
| Alternator (902)                  | G-10               | 18               | Sender - Trans Speed                         | E-9                | 26               |
| Alternator (906)                  | G-12               | 18               | Sender/Switch - Hydraulic Temperature        | D-8                | 27               |
| Backlight Lamp Beams              | H-6                | A                | Solenoid - Boom Lower                        | C-2                | 25               |
| Backlight Lamp LH                 | G-6                | A                | Solenoid - Coupler                           | D-2                | 25               |
| Backlight Lamp RH                 | H-6                | A                | Solenoid - Forward Pump Valve Group          | E-12               | 15               |
| Battery                           | H-8                | 5                | Solenoid - Fuel Shutdown (902)               | F-10               | 21               |
| Breaker - AC 30 Amp               | H-8                | 4                | Solenoid - Fuel Shutdown (906)               | H-11               | 21               |
| Breaker - Alternator 60 Amp (902) | G-10               | 3                | Solenoid - Hydraulic Shutoff                 | D-9                | 24               |
| Breaker - Alternator 60 Amp (906) | G-12               | 3                | Solenoid - Implement Detents Valve Group     | C-12               | 8                |
| Breaker - Main 60 Amp             | H-8                | 4                | Solenoid - Implement Detents Valve Group     | C-12               | 8                |
| Breaker - Roading Lamps 20 Amp    | H-8                | 4                | Solenoid - Motor Reversing Motor Valve Group | D-8                | 23               |
| Control - FNR                     | C-11               | 6                | Solenoid - Reverse Pump Valve Group          | E-12               | 15               |
| Flasher                           | I-8                | A                | Solenoid - Speed Select Motor Valve Group    | D-8                | 23               |
| Function Lamps                    | G-8                | A                | Switch - 4th Function                        | A-9                | 8                |
| Fuses                             | B/C-3              | C                | Switch - Air Conditioning                    | A-12               | 9                |
| Gauge - Fuel                      | G-7                | A                | Switch - Beacon                              | H-8                | A                |
| Gauge - Hydraulic Oil Temp        | H-7                | A                | Switch - Blower                              | C-12               | 8                |
| Gauge - Speed                     | H-7                | A                | Switch - Brake Lamp                          | D-3                | 6                |
| Glue Plugs (902)                  | I-10               | 19               | Switch - Brake Level                         | D-3                | 6                |
| Glue Plugs (906)                  | H-12               | 19               | Switch - Cold Start                          | A-10               | 8                |
| Ground - Cab Mount Plate          | H-8                | 5                | Switch - Coolant (902)                       | H-10               | 16               |
| Ground - Engine Frame             | F-12               | 17               | Switch - Coolant (906)                       | H-12               | 18               |
| Ground Stud - Cab Rear            | H-8                | 5                | Switch - Coupler                             | A-8                | 8                |
| Ground Stud - Engine End Frame    | F-10               | 3                | Switch - Dead Engine Lower                   | A-8                | 9                |
| Ground Stud - Machine             | A-5                | 11               | Switch - Defrost                             | A-12               | 9                |
| Ground Stud - Nose Cone           | H-2                | 6                | Switch - Dimmer                              | I-4                | A                |
| Horn - Forward                    | D-3                | 2                | Switch - Disconnect                          | I-8                | 5                |
| Motor - Service                   | G-7                | A                | Switch - Engine Oil Press (902)              | H-10               | 20               |
| Motor Filler                      | G-7                | A                | Switch - Engine Oil Press (906)              | H-12               | 20               |
| Motor - Blower                    | F-8                | 22               | Switch - Filter Bypass                       | F-11               | 14               |
| Motor - Front Washer              | D-11               | 9                | Switch - FNR                                 | C-12               | 8                |
| Motor - Front Wiper               | F-3                | 8                | Switch - Forward Horn                        | H-7                | A                |
| Motor - Rear Washer               | E-11               | 9                | Switch - Front Washer                        | F-6                | A                |
| Motor - Rear Wiper Motor          | G-8                | 10               | Switch - Front Wiper                         | F-5                | A                |
| Motor - Starter (902)             | G-10               | 17               | Switch - Hazard                              | I-7                | A                |
| Motor - Starter (906)             | F-12               | 17               | Switch - Hydraulic Shutoff                   | B-8                | 8                |
| Relay - Backup Alarm              | A-4                | C                | Switch - Key Start                           | B-12               | 8                |
| Relay - Detent                    | A-4                | C                | Switch - Parking Brake                       | G-8                | 13               |
| Relay - Front Floods              | A-3                | C                | Switch - Rear Wiper                          | F-7                | A                |
| Relay - Main                      | A-6                | C                | Switch - Roading Lamp                        | I-5                | A                |
| Relay - Rear Floods               | A-3                | C                | Switch - Speed Selector                      | B-9                | 8                |
| Relay - Start Aid (902)           | I-10               | 3                | Switch - Tools                               | A-11               | 8                |
| Relay - Start Aid (906)           | I-10               | 3                | Switch - Turn Signal                         | I-7                | A                |
| Relay - Start Aid (906)           | H-11               | 3                | Switch - Working Lamps                       | I-5                | A                |
| Relay - Start Aid (906)           | H-11               | 3                | Switch/Sender - Hydraulic Temperature        | D-8                | 27               |

Machine locations are repeated for components located close together.

A = Components located on or in the Dash.

B = Components located on or in the Right Console.

C = Components located on or in the Fuse Panel.



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# Schematic

## 902 and 906 Compact Wheel Loader Electrical System

902:  
7E51-Up

906:  
6ZS1-Up

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| Wire Description              |            |                             |                                        |  |
|-------------------------------|------------|-----------------------------|----------------------------------------|--|
| Wire Number                   | Wire Color | Description                 | Description                            |  |
| <b>Power Circuits</b>         |            |                             |                                        |  |
| 101                           | RD         | Battery (+)                 | 500 BR Front Wiper - Park              |  |
| 102                           | RD         | Lighting Power              | 501 GN Front Wiper - Low               |  |
| 103                           | RD         | Air Conditioning Power      | 502 OR Front Wiper - Hi                |  |
| 104                           | RD         | Slow Plug Power             | 503 BR Rear Wiper - Park               |  |
| 105                           | RD         | Key Start/Shutdown Power    | 504 YL Rear Wiper - Low                |  |
| 109                           | RD         | Alternator Output (+)       | 506 PU Front Washer                    |  |
| 110                           | GN         | Fuel Shutoff Power          | 507 WH Rear Washer                     |  |
| 112                           | PU         | Main Power Relay Output     | 508 PU Radio Speaker Left              |  |
| 114                           | GN         | Forward Horn Power          | 509 WH Radio Speaker Left - Common     |  |
| 117                           | RD         | Main Breaker Output         | 511 BR Radio Speaker Right             |  |
| 118                           | GY         | Wiper/Washer Power          | 512 GN Radio Speaker Right - Common    |  |
| 120                           | YL         | Back-Up Alarm Power         | 515 GY Blower Motor - Hi               |  |
| 122                           | BU         | Miscellaneous Power         | 516 GN Blower Motor - Medium           |  |
| 123                           | WH         | Gauge Power                 | 517 BU Blower Motor - Low              |  |
| 124                           | GN         | Heater Blower Power         | 521 YL Air Conditioner                 |  |
| 126                           | PK         | Transmission ECM Power      | 536 WH Hazard Switch Signal            |  |
| 127                           | OR         | Start-Aid Power             | 537 GN Flasher Output                  |  |
| 128                           | PK         | Implement Detent Power      | 567 WH Air Conditioner Switch Enable   |  |
| 129                           | BU         | Detent Relay Output         | A538 OR Rear Window Defrost            |  |
| 130                           | GN         | Stop Lamp Power             | <b>Lighting Circuits</b>               |  |
| 135                           | BU         | Radio Power                 | 603 PK Beacon                          |  |
| 140                           | BU         | Rear Window Defrost Power   | 604 OR Stop Lamp                       |  |
| 144                           | GN         | Beacon Power                | 605 YL Left Turn Lamp                  |  |
| 161                           | PK         | Front Flood Power           | 608 GY Right Turn Lamp                 |  |
| 162                           | YL         | Rear Flood Power            | 607 PK Front Flood Lamp Relay Output   |  |
| 197                           | GN         | 4th Function Power          | 608 GN Rear Flood Lamp Relay Output    |  |
| <b>Ground Circuits</b>        |            |                             |                                        |  |
| 200                           | BK         | Main Chassis Ground         | 610 OR Head Lamp Signal                |  |
| 201                           | BK         | ECM Ground                  | 611 PU Head Lamp Hi-Beam               |  |
| 202                           | BK         | ECM Relay Return            | 614 PU Park/Tail Dash Lamp             |  |
| <b>Basic Machine Circuits</b> |            |                             |                                        |  |
| 304                           | WH         | Start Relay Output          | 617 BR Left Tail Lamp                  |  |
| 306                           | GN         | ECM Start Output            | 618 YL Right Tail Lamp                 |  |
| 307                           | OR         | Key Switch Start Signal     | 619 GN Head Lamp Lo-Beam               |  |
| 308                           | YL         | Key Switch Run Signal       | <b>Control Circuits</b>                |  |
| 321                           | BR         | Back-Up Alarm Relay Output  | 751 GN Motor Reversing Solenoid        |  |
| 322                           | GY         | Forward Horn                | 750 BU Coupler Solenoid                |  |
| 330                           | YL         | ECM Neutral Output          | 781 PK 4th Function Control 1          |  |
| <b>Monitoring Circuits</b>    |            |                             |                                        |  |
| 403                           | GN         | Alternator Pulse Output     | 782 GY 4th Function Control 2          |  |
| 404                           | YL         | Hydraulic Oil Temp Switch   | A751 YL Auxiliary Tool Power           |  |
| 405                           | GY         | Oil Pressure                | A752 BR Auxiliary Tool Signal          |  |
| 406                           | PU         | Coolant Temperature         | E783 WH Dead Engine Boom Lower         |  |
| 419                           | YL         | Park Brake Engaged          | F747 OR Speed Select                   |  |
| 442                           | GY         | Hydraulic Oil Temp Sender   | F765 BR Park Brake Disengaged          |  |
| 447                           | PK         | Fuel Level                  | G750 BU Forward Switch Signal          |  |
| 449                           | BU         | Speed                       | G755 GY Reverse Switch Signal          |  |
| 483                           | PK         | Brake Fluid Level           | G763 PU Neutral Switch Signal          |  |
| 2441                          | YL         | Alternator Indicator Lamp   | H791 GN Rear Flood Lamp Signal         |  |
| E417                          | OR         | ECM Park Brake Alarm Output | H792 BU Front Flood Lamp Signal        |  |
| E455                          | BR         | Hydraulic Oil Filter        | E801 OR ECM Forward Output             |  |
|                               |            |                             | E803 YL ECM Reverse Output             |  |
|                               |            |                             | 975 WH Forward/Reverse Solenoid Return |  |
|                               |            |                             | L981 YL Hydraulic Shutoff              |  |
|                               |            |                             | L987 WH Start-Aid                      |  |

| Connector Location |                    |                  |  |
|--------------------|--------------------|------------------|--|
| Connector Number   | Schematic Location | Machine Location |  |
| CONN 1             | G-10, 11           | 16               |  |
| CONN 2             | E-10               | 12               |  |
| CONN 3 ACC Socket  | G-8                | 13               |  |
| CONN 4             | G-8                | 5                |  |
| CONN 5             | G-8                | 5                |  |
| CONN 6             | E-7                | 12               |  |
| CONN 7             | E-5                | 9                |  |
| CONN 8             | D-3                | 2                |  |
| CONN 9             | D-3                | 2                |  |
| CONN 10            | G-3                | 8                |  |
| CONN 11            | G-3                | 8                |  |
| CONN 12 Tool       | D-3                | 1                |  |
| CONN 13            | H-8                | 5                |  |

The connectors shown in this chart are for harness to harness connections. Connectors that join a harness to a component are generally located at or near the component. See the Component Location Chart.

| Off Machine Switch Specification |                              |                               |                  |                  |
|----------------------------------|------------------------------|-------------------------------|------------------|------------------|
| Part No.                         | Function                     | Actuate                       | Deactuate        | Contact Position |
| 142-8804                         | Hydraulic Temperature Sender | 102.0 ± 3 °C (215.8 ± 5.4 °F) | 90 °C (194.0 °F) | Normally Open    |

| Resistor, Sender and Solenoid Specifications |                                           |                                |                              |
|----------------------------------------------|-------------------------------------------|--------------------------------|------------------------------|
| Part No.                                     | Component Description                     | Resistance (Ohms) <sup>1</sup> |                              |
| 141-2968                                     | Sender - Fuel Level                       | 27.5 - 39.5                    |                              |
|                                              | Motor Reversing Solenoid                  | 240 - 260                      |                              |
|                                              | Empty                                     |                                |                              |
| 142-8804                                     | Sender/Switch - Hydraulic Oil Temperature | 79 to 106 @ 80 °C (176 °F)     | 263 to 283 @ 110 °C (230 °F) |

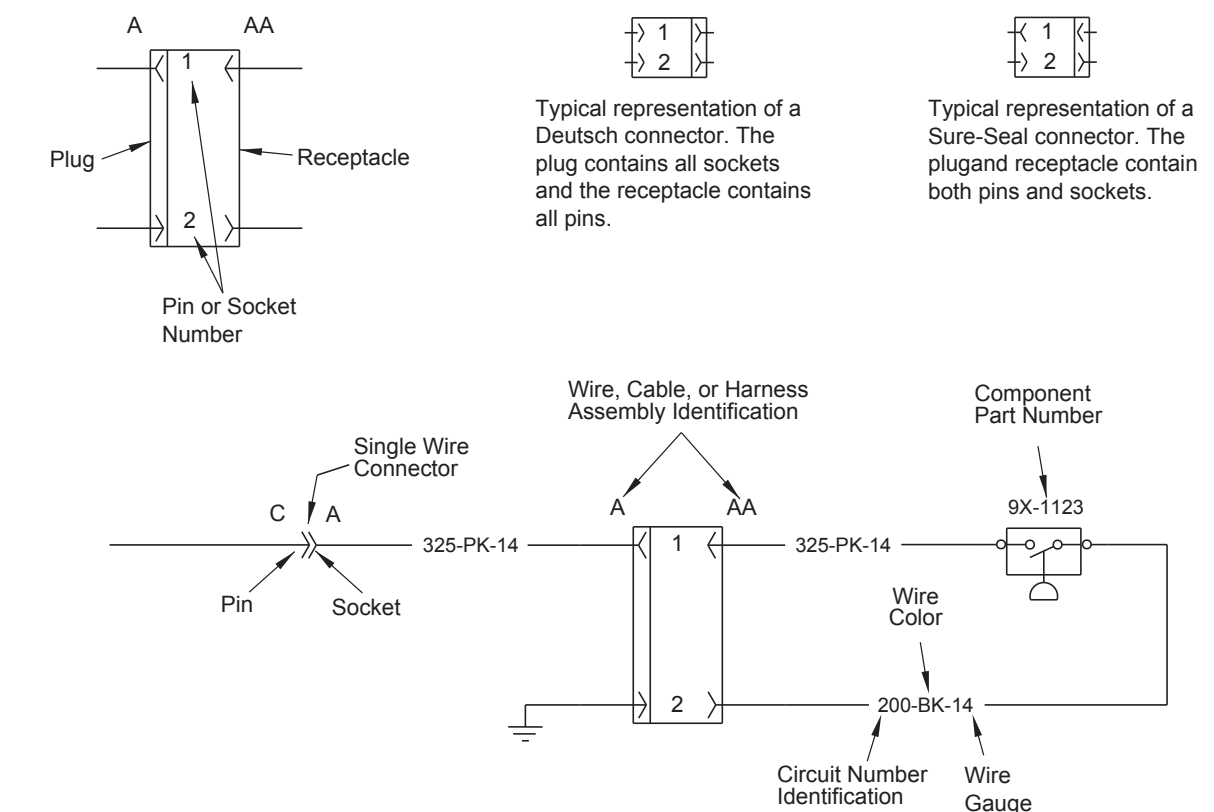
<sup>1</sup> At room temperature unless otherwise noted.

| Related Electrical Service Manuals |             |
|------------------------------------|-------------|
| Title                              | Form Number |
| Transmission Electronic Control    | SEN1258     |

### Electrical Schematic Symbols And Definitions

- Pressure Symbol
- Temperature Symbol
- Level Symbol
- Flow Symbol
- Normally open switch that will close with an increase of a specific condition (temp-press-etc.).
- Normally open switch that is closed due to an applied condition, and will open again with a specific decrease in that condition.
- Normally closed switch that will open with an increase of a specific condition.
- Normally closed switch that is open due to an applied condition, and will close again with a specific decrease in that condition.
- The circle indicates that the component has screw terminals and a wire can be disconnected from it.
- No circle indicates that the wire cannot be disconnected from the component.
- This indicates that the component has a wire connected to it that is connected to ground.
- This indicates that the component does not have a wire connected to ground. It is grounded by being fastened to the machine.

### Harness And Wire Electrical Schematic Symbols



### Electrical Schematic Symbols And Definitions

- FUSE** - A component in an electrical circuit that will open the circuit if too much current flows through it.
- REED SWITCH** - A switch whose contacts are controlled by a magnet. A magnet closes the contacts of a normally open reed switch; it opens the contacts of a normally closed reed switch.
- SENDER** - A component that is used with a temperature or pressure gauge. The sender measures the temperature or pressure. Its resistance changes to give an indication to the gauge of the temperature or pressure.
- RELAY (Magnetic Switch)** - A relay is an electrical component that is activated by electricity. It has a coil that makes an electromagnet when current flows through it. The electromagnet can open or close the switch part of the relay.
- CIRCUIT BREAKER (C/B)** - A component in an electrical circuit that will open the circuit if too much current flows through it. This does not destroy the circuit breaker and it can be reset to become part of the circuit again.
- SOLENOID** - A solenoid is an electrical component that is activated by electricity. It has a coil that makes an electromagnet when current flows through it. The electromagnet can open or close a valve or move a piece of metal that can do work.
- MAGNETIC LATCH SOLENOID** - A magnetic latch solenoid is an electrical component that is activated by electricity and held latch by a permanent magnet. It has two coils (latch and unlatch) that make electromagnets when current flows through them. It also has an internal switch that places the latch coil circuit open at the time the coil latches.



