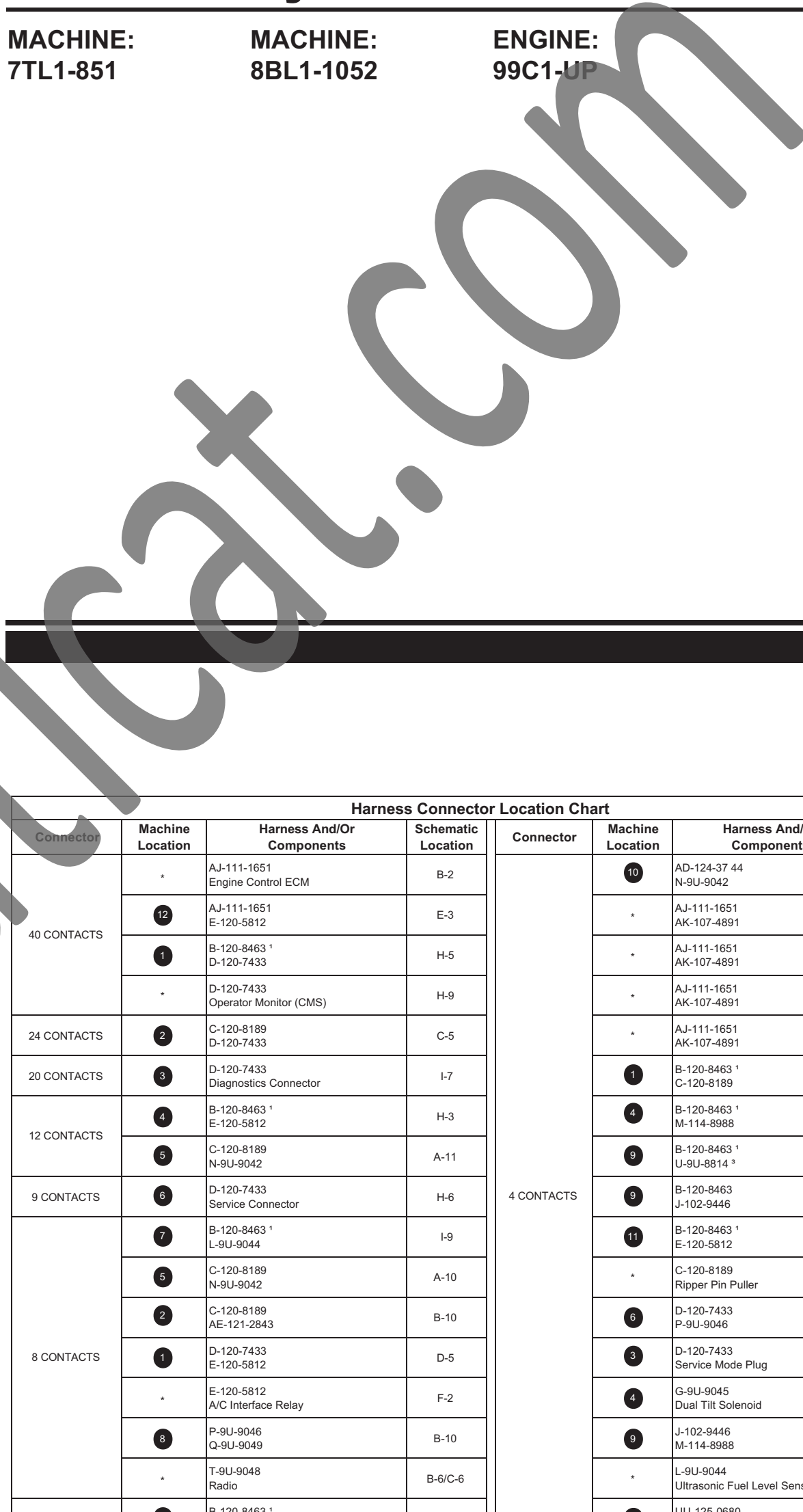


Schematic

D9R Tractor With 3408E Engine Electrical System

MACHINE: 7TL1-851 MACHINE: 8BL1-1052 ENGINE: 99C1-UP



Connector	Machine Location	Harness And/Or Components	Schematic Location	Connector	Machine Location	Harness And/Or Components	Schematic Location
40 CONTACTS	1	AJ-111-1651 Engine Control ECM	B-2	4	1	AD-124-37 44 N-9J-9042	D-11
		AJ-111-1651 E-120-5812	E-3			AJ-111-1651 AK-107-4891	F-2
		B-120-8463 * D-120-7433	H-5			AJ-111-1651 AK-107-4891	F-2
		D-120-7433 Operator Monitor (CMS)	H-9			AJ-111-1651 AK-107-4891	F-2
		C-120-8189 D-120-7433	C-5			AJ-111-1651 AK-107-4891	F-2
		D-120-7433 Diagnostic Connector	I-7			B-120-8463 * C-120-8189	H-10
		B-120-8463 * E-120-5812	H-3			B-120-8463 * M-114-8988	H-10
		C-120-8189 N-9J-9042	A-11			B-120-8463 * U-9J-8814 *	H-10
		D-120-7433 Service Connector	H-6			B-120-8463 J-102-9446	H-10
		B-120-8463 * N-9J-9042	I-9			B-120-8463 * E-120-5812	H-3
		C-120-8189 N-9J-9042	A-10			C-120-8189 Ripper Pin Puller	A-12
		C-120-8189 AE-121-2843	B-10			D-120-7433 P-9J-9046	I-6
D-120-7433 E-120-5812	D-5	D-120-7433 Service Mode Plug	I-7				
E-120-5812 A/C Interface Relay	F-2	G-9J-9045 Dual Tilt Solenoid	I-2				
P-9J-9046 Q-9J-9049	B-10	J-102-9446 M-114-8988	H-10				
T-9J-9048 Radio	B-6/C-6	L-9J-9044 Ultrasonic Fuel Level Sensor	D-12				
B-120-8463 * G-9J-9045	H-3	U-125-0880 N-9J-9042	D-11				
B-120-8.863 * S-9J-9014	I-12						
C-120-8189 E-120-5812	C-5						
D-120-7433 Harness Code *	H-8						
E-120-5812 ZZ-125-1261	H-1						
J-102-9446 K-106-8693	I-11						
N-9J-9042 Voltage Converter	D-11						
P-9J-9046 Front Wiper Motor	C-9						
P-9J-9046 Left Wiper Motor	H-9						
P-9J-9046 Right Wiper Motor	B-9						
TT-123-4081 Prelube / Timer Solenoid	H-4						
R-9J-9050 Rear Wiper Motor	E-11						

Machine locations are repeated for components located close together.
* = Connector is located at the component.
* B - 120-8463 Differential Steering only
* B - 120-8006 Clutch / Brake only

Harness Code 102-4396 Differential Steering only
Harness Code 116-2090 Clutch / Brake only
* U - 9J-8814 Differential Steering only
* U - 101-9707 Clutch / Brake only

Part No.	Component Description	Resistance (Ohms)†
9D-1950	Resistor - Blower Motor Speed	Overall 2.0 ± 1.1; Tap 1.0 ± 0.5
3E-7842	Resistor - Starter/Diagnostic/System Volt	150 ± 7.5
102-0347	Solenoid - Air Conditioner Clutch	14.4 ± 0.6
109-3025	Solenoid - Demand Fan Valve	3.0
3E-9205	Solenoid - Dual Tilt	24.9
109-3032	Solenoid - Quick Drop Valve	34.3 ± 1.7
107-0677	Solenoid - Rail Pressure Control Valve	10.1 ± 3.0
3E-8575	Solenoid - Ripper Pin Puller	24.9
3E-6333	Solenoid - Start Aid	6.0
130-9876	Solenoids - Injector	2.1 ± 0.2

† At room temperature unless otherwise noted.

MID No.	Module
26	Computerized Monitoring System (CMS)
36	Engine Control

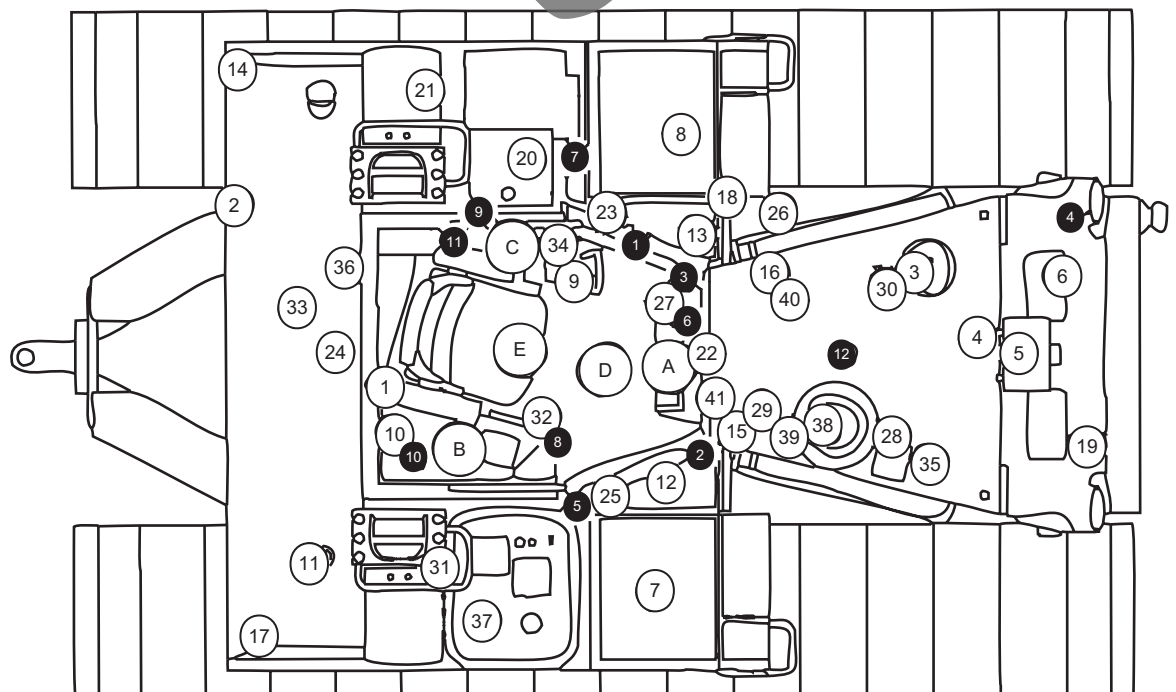
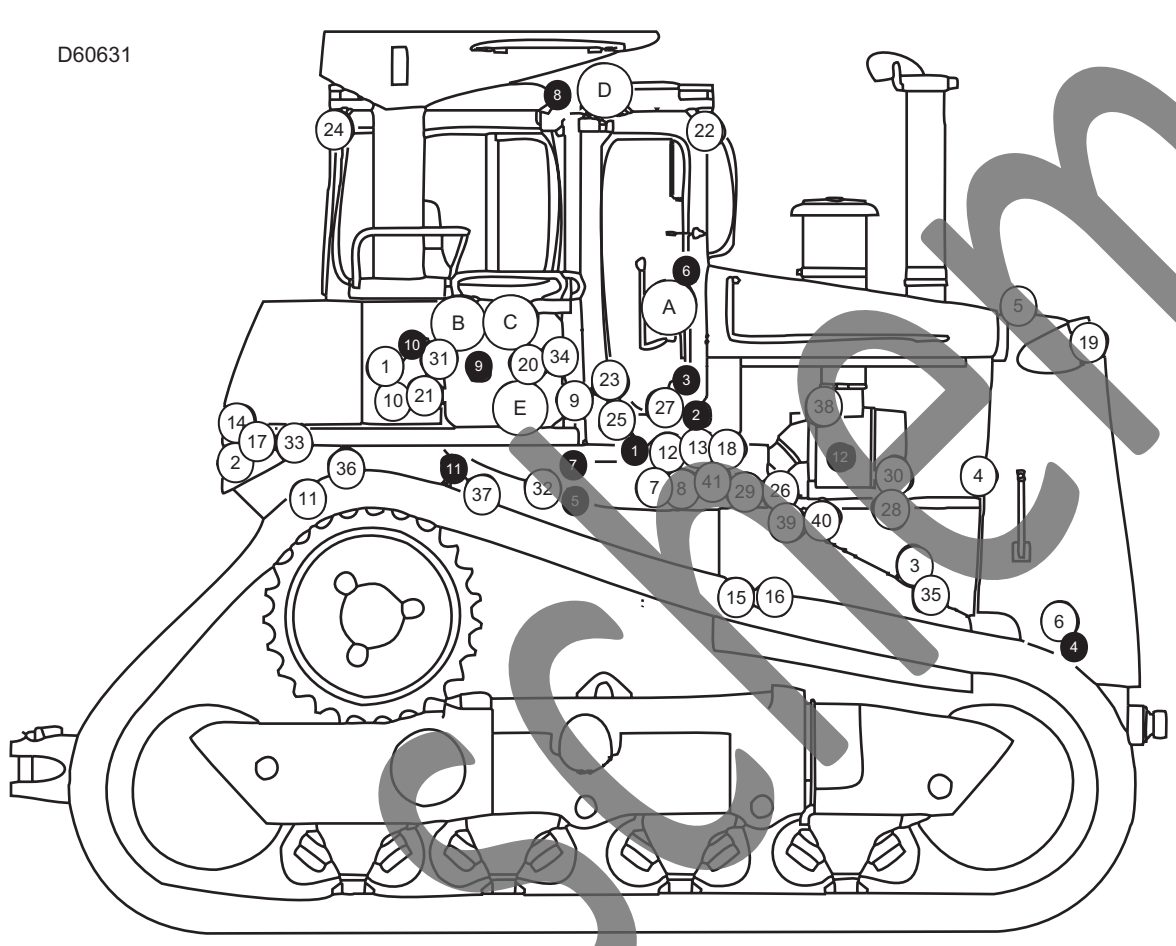
FMI No.	Failure Description
0	Data valid but above normal operational range
1	Data valid but below normal operational range
2	Data erratic, intermittent, or incorrect
3	Voltage above normal or shorted high
4	Voltage below normal or shorted low
5	Current below normal or open circuit
6	Current above normal or grounded circuit
7	Mechanical system not responding properly
8	Abnormal frequency, pulse width, or period
9	Abnormal update
10	Abnormal rate of change
11	Failure mode not identifiable
12	Bad device or component
13	Out of calibration

Part No.	Function	Actuate	Deactuate	Contact Position
3E-6426	Coolant Flow (CMS)	362 ± 20mV (45.8mm ID point) (1.3 ± 1.0p, 1.8in ID point)	330mV MIN (1.1oz MIN)	Normally Open
3E-9350	Filter Bypass (CMS)	52 ± 3°C (125.5 ± 5.4°F)	43°C MIN (109.4°F MIN)	Normally Closed
9X-7781	Hydraulic Oil Filter/ Power Train Filter Pressure (CMS)	210 ± 70kPa (30 ± 10psi)	—	Normally Open
105-9152	Oil Pressure (CMS)	30 ± 7 kPa (4.3 ± 1.0psi)	30 ± 7kPa (4.3 ± 1.0psi)	Normally Closed
114-5333	Refrigerant Pressure (AC)	275 to 1750 kPa (40 to 255 psi)	—	Normally Open *
124-8274	Hydraulic Oil Filter Bypass (CMS)	25 ± 3°C (77 ± 5.4°F)	15°C MIN (59°F MIN)	Normally Open

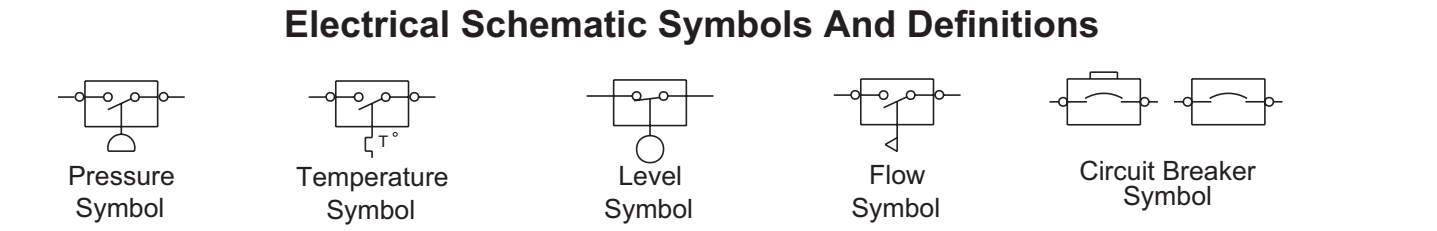
* A hysterisis band exists; with increasing pressure the closed condition can be maintained up to 2800 kpa (405 psi), with decreasing pressure the closed condition can be maintained down to 170 kpa (25psi).
* Contact position at the contacts of the harness connector.

CID No.	Component
Computerized Monitoring System (CMS) 26	
098	Fuel Level Sensor
100	Engine Oil Pressure Sensor
110	Engine Coolant Temperature Sensor
168	Electrical System Voltage
177	Power Train Oil Temperature Sensor
248	CAT Data Link
270	Harness Code
271	Action Alarm
324	Action Lamp
600	Hydraulic Oil Temperature Sensor
601	Brake Air Pressure Sensor
627	Parking Brake Switch
Engine Control 36	
001	Cylinder 1 Injector Solenoid
002	Cylinder 2 Injector Solenoid
003	Cylinder 3 Injector Solenoid
004	Cylinder 4 Injector Solenoid
005	Cylinder 5 Injector Solenoid
006	Cylinder 6 Injector Solenoid
007	Cylinder 7 Injector Solenoid
008	Cylinder 8 Injector Solenoid
042	Rail Control Valve
091	Throttle Switch
094	Filtered Fuel Pressure
100	Filtered Oil Pressure
100	Crankcase Pressure
161	Timing Calibration
164	Rail Pressure
168	Electrical System Voltage
174	Fuel Temperature
175	Engine Oil Temperature
190	Primary Engine RPM Sensor
248	CAT Data Link
253	Personality Module Mismatch
254	ECM Failure
261	Timing Calibration
262	Analog Sensor Power Supply
263	Digital Sensor Power Supply
264	Shutdown Inputs Are Incorrect
266	Crank W/O Injector Inputs
267	Remote Shutdown
268	System Parameter Fault
273	Turbo Inlet Pressure
274	Atmospheric Pressure
275	Turbo Inlet Pressure
276	Turbo Inlet Pressure
277	Timing Calibration Sensor
289	Unfiltered Fuel Pressure
291	Engine Fan Valve
338	Prelube Relay
342	Secondary Engine RPM Signal
444	Starting Motor Relay
542	Unfiltered Oil Pressure
544	Engine Fan Speed
545	Start Aid Relay
650	Harness Code
827	Turbo Turbine Inlet Exhaust Temp
828	Turbo Turbine Inlet Exhaust Temp

Title	Form Number
Alternator	SEN97508
Computerized Monitoring System (CMS)	SEN95317
Starting And Charging Systems	SEN92947
Starting Motor, SP-ALT Series	SEN93860
Troubleshooting 3408E/3412E	SEN91054



MACHINE HARNESS CONNECTOR AND COMPONENT LOCATIONS



Normally open switch that will close with an increase of a specific condition (temp-press-etc.). The circle indicates that the component has screw terminals and a wire can be disconnected from it.

Normally closed switch that will open with an increase of a specific condition. 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.

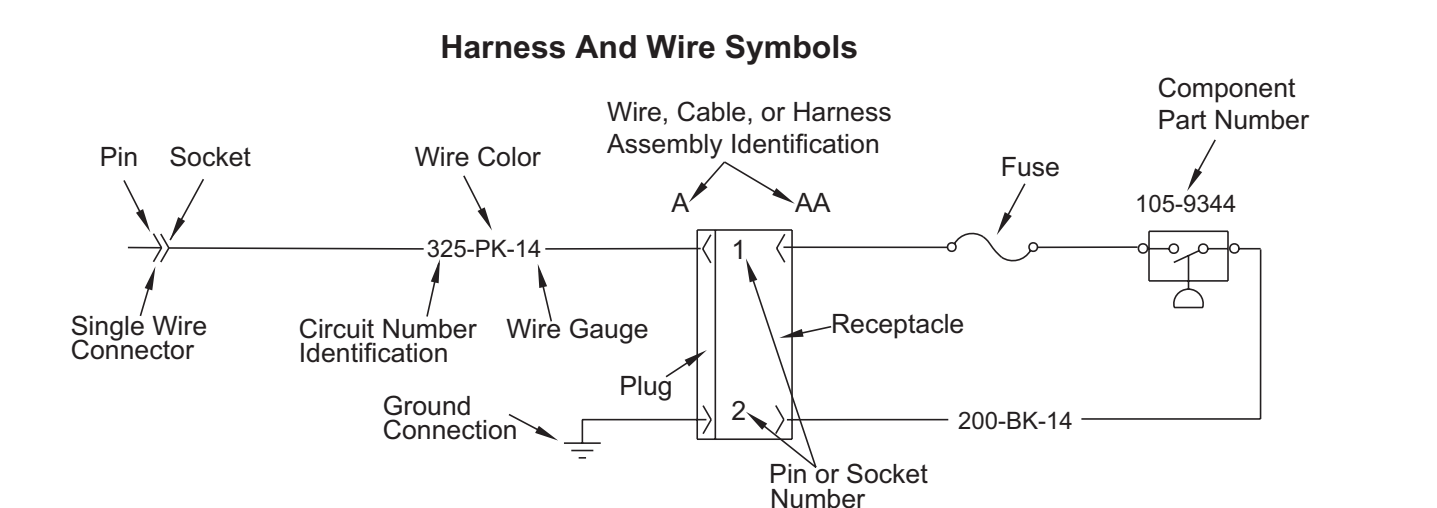
This indicates that the component does not have a wire connected to ground. It is grounded by being fastened to the machine.

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.

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.



Typical representation of a Deutsch connector. The plug contains all sockets and the receptacle contains all pins.

Typical representation of a Sure-Seal connector. The plug and receptacle contain both pins and sockets.

Wire Number	Wire Color	Description	Wire Number	Wire Color	Description
Power Circuits					
101	RD	Battery(+24V)	499	GY	Hydraulic Filter SW
102	RD	Front Flood Power	A401	RD	System Voltage (Monitor)
105	RD	Keyswitch Power	A447	PK	Prelube Oil Pressure
108	BU	Wiper/Ether Aid Power	Accessory Circuits		
109	RD	Alternator Output (+24V)	500	BR	Forward Wiper Intermittent
112	PU	Main Power (switched)	501	GN	Forward Wiper Motor Low
113	OR	Monitor Power (+24V)	502	OR	Forward Wiper Motor High
114	RD	Horn Fuse	503	BR	Rear Wiper Intermittent
116	BR	Rear Floods Fuse	504	YL	Rear Wiper Motor Low
121	RD	Backup Alarm Fuse	505	BU	Rear Wiper Motor High
124	GN	Blower / A/C Power	506	PK	Front Washer
125	OR	Side Flood Fuse	507	WH	Rear Washer
130	GN	Seat Air Suspension	508	PU	Left Speaker
131	BR	Seat Heater	509	WH	Left Speaker
150	RD	Engine ECM Power (3408E ONLY)	511	BR	Right Speaker
158	BR	Remote Condenser Blower Fuse	512	GN	Right Speaker
174	PK	Accessory Fuse	513	OR	A/C Clutch to Pressure SW
177	RD	Main Power - Unswitched	515	GY	Blower High
186	RD	Power Outlet Fuse	516	GN	Blower Medium
Ground Circuits					
200	BK	Machine Ground	521	YL	A/C On/Off SW to Pressure SW
201	BK	Monitor Ground	522	WH	A/C Clutch to Thermostat SW
203	BK	Disconnect SW to Diagnostic Connector	523	BR	Left Wiper Intermittent
207	BK	Starter Ground to Diagnostic Connector	524	BU	Left Wiper Motor Low
270	BK	Monitor Code 0	525	GY	Left Wiper Motor High
271	BK	Monitor Code 1	526	YL	Right Wiper Intermittent
272	BK	Monitor Code 2	527	GN	Right Wiper Motor Low
273	BK	Monitor Code 3	528	PK	Right Wiper Motor High
274	BK	Monitor Code 4	529	WH	Left Washer
290	BK	Service (Monitor)	530	OR	Right Washer
291	BK	Clear (Monitor)	533	YL	Dual Tilt SW to Dual Tilt Valve
354	PK	Dual Tilt SW to Dual Tilt Valve	554	PK	Dual Tilt SW to Dual Tilt Valve
Basic Machine Circuits					
301	BU	Starter 1 Motor Terminal	562	BU	+12V Power
302	OR	Starter 1 Motor Diagnostic	304	WH	Starter 1 Solenoid
306	GN	Neutral Start SW to Start Relay	608	GN	Rear Floods
307	OR	Keyswitch Start	609	YL	Side Floods
308	YL	Keyswitch On	610	OR	Front Floods
310	PU	Ether Aid SW to Ether Solenoid	630	GY	Ripper Flood
311	WH	Ether Aid Temp SW to Ether Solenoid	632	BU	Accessory Power
312	PK	Starter 2 Motor Terminal	643	GN	Dimmer SW - Up
313	GY	Starter 2 Motor Diagnostic	644	OR	Dimmer SW - Down
314	PU	Starter 2 Solenoid	Control Circuits		
321	BR	Backup Alarm to Backup Alarm SW	779	WH	Ripper Pin Puller
322	GY	Horn	780	PU	Ripper Pin Puller
337	WH	Keyswitch to Neutral Start SW	A700	OR	Engine Sensor Power (3408E ONLY)
Monitoring Circuits					
403	GN	Alternator R Terminal	6793	BU	ATA Datalog (3408E ONLY)
405	GY	Engine Oil Pressure	6794	YL	ATA Datalog (3408E ONLY)
410	WH	Action Alarm	6792	GN	Decelerator Pedal (3408E ONLY)
411	PK	Action Lamp	6716	PU	Throttle SW (3408E ONLY)
416	WH	Throttle SW (3408E ONLY)	6717	WH	Throttle SW (3408E ONLY)
412	BU	Coolant Flow SW	6718	YL	Throttle SW (3408E ONLY)
426	BR	PTO Filter SW	6721	GY	Integrated Ether SW (3408E ONLY)
441	OR	Coolant Temperature Sensor	6723	GY	Quick Drop SW to Quick Drop Valve
442	GY	Hydraulic Temperature	6720	GN	Quick Drop SW to Quick Drop Valve
443	YL	PTO Temperature	892	BR	Cat Datalog
447	PK	Fuel Level	893	GN	Cat Datalog
450	YL	Engine Speed	996	BR	Digital Return (3408E ONLY)

