Wire Description

Wire Number	Wire Color	Description
		Power Circuits
113	OR	Opr Mon Panel VMIS B+ Switched
135	RD	AuxCkt
197	GN	AuxCkt
		Ground Circuits
200	BK	Main Chassis
201	BK	Operator Monitor Return
210	BK	Converter Output (24/12 Volt)
270	BK	CMS dent Code 0
271	BK	CMS dent Code 1
272	BK	CMS Ident Code 2
273	BK	CMS dent Code 3
274	BK	CMS dent Code 4
275	BK	CMS dent Code 5
290	BK	CMS Service
291	BK	CMS Clear
A210	BK	Linkage Ctrl Harness Code 0
A21 1	BK	Linkage Ctrl Harness Code 1
A212	BK	Linkage Ctrl Harness Code 2
A213	BK	Linkage Ctrl Harness Code 3
		Monitoring Circuits
403	GN	Alternator (R) Term.
410	WH	Opr Mon Fault Alarm
411	PK	Opr Mon Master
426	BR	Opr Mon Power Train Oil Filter
442	GY	Hyd System Temp Gage
443	YL	Power Train Temp Gage
447	PK	Fuel Level Gage
499	GY	Opr Mon Implement Oil Filter
C413	YL	VMIS Display Data
C414	BU	VMIS Display Load
C415	WH	VMIS Display Keydata
E455	BR	Hydraulic Oil Filter
		Accessory Circuits
C569	YL	Second DC/DC Converter Power Output
		Lighting Circuits
600	BR	Dash Lamp Basic
		Control Circuits
E707	GN	VMIS Display +V
E708	PK	VMIS Display Clock
E710	BU	VMIS LCD Lamp Driver
E735	PU	Smart Ems Tack/Serv Mtr/Odometer Select
F711	GN	CAN Link +
F712	YL	CAN Link -
F797	BU	Display Sensor +V
F799	BU	Impl Ctrl Sys Dump Valve

Wire Number	Wire Color	Description
		Control Circuits (cont'd)
H710	PK	Blade Control Raise/Lower
H711	GN	Blade Control Tilt Sensor
H713	PK	Blade Raise 801
H714	OR	Blade Lower Sol
J764	BR	Instrument Return
J794	BR	Auto Stop SW NO.
892	BR	VMIS Start Mod Right (-) Port/CAT Data Link (-)
893	GN	VMIS Start Mod Right (+) Port/CAT Data Link (+)
H801	PU	Proportional Driver Return (1-4)
H802	GY	Proportional Driver Return (5-8)
H803	BU	Proportional Driver Return (9-12)
H804	GN	Proportional Driver Return (13-16)
H805	BR	Proportional Driver Return (17-20)
E908	BR	ECPC Trans Input SPD +
E909	WH	ECPC Trans Input SPD -
E917	WH	Implement Lockout SW to Gnd (NO.)
E918	GN	Implement Lockout SW to Gnd (N.C.)
J910	OR	Single Tilt 801
J913	GN	Ripper Shank In Sol
J914	PU	Ripper Lower Sol
J921	PK	Ripper Raise Sol
J922	GY	Ripper Shank Out Sol
J929	YL	Ripper Auto Stow SW (N.C.)
J930	PK	Ripper Auto-Stow SW (NO.)
J943	GN	Mode Select SW (NO.)
J944	BU	Mode Select SW (N.C.)
J945	WH	Manual Select SW (NO.)
J946	OR	Manual Select SW (N.C.)
J947	YL	Shank In/Out Sensor
J948	PK	Ripper Raise/Lower
J949	GY	Right Lift Cylinder Position
J950	PU	Left Lift Cylinder Position
J991	OR	Pitch Forward Trigger SW (NO.)
J996	BR	Pitch Forward Trigger SW (N.C.)
J997	GN	Implement LED driver 3
J998	BU	Implement LED driver 2
J999	WH	Implement LED driver 1
M916	OR	Ripper Enable Sol Valve
M919	BU	Main Pump Pressure
M921	BR	Tilt Pump Pressure
M927	GN	Implement Lockout Feedback
M928	BU	Sol Return
M929	WH	Blade Tilt Left Sol
M930	PK	Pitch 801
M931	YL	Implement Sensor Supply
N932	PU	Implement LED Driver 4
N935	OR	Pitch Back Switch (NO.)
N936	YL	Pitch Back Switch (NC.)
N937	PU	Pitch Forward Switch (NO.)
N938	BU	Pitch Forward Switch (NC.)

Machine Codes

Sales Model	Machine Code
D11R	28

Component Identifiers (CID[1]) Module Identifier (MID[2])

CID No.	Component
	Implement Control MID 82
0078	Blade Pitch
0168	Electrical System Voltage
0296	Power Train ECM
0352	Blade Control Raise/Lower Sensor
0353	Blade Control Tilt Left/Right Sensor
0490	Implement Lockout Switch
0497	Tilt Right Solenoid
0498	Tilt Left Solenoid
0597	Main Pump Pressure Sensor
0869	Right Cylinder Position Sensor
0870	Left Cylinder Position Sensor
0873	Tilt Pump Pressue Sensor
0874	Mode Select Switch
0875	Manual Select Switch
0876	Pitch Forward Trigger Switch
0877	Pitch Back Switch
0879	Shank In/Out Sensor
0880	Ripper Raise/Lower Sensor
0881	Ripper Auto Stow Switch
0882	Implement Lockout Solenoid Valve
0883	Pitch Regenerate Solenoid Valve
0884	Pitch Solenoid
0885	Ripper Enable Solenoid Valve
0886	Ripper Shank In Solenoid
0887	Ripper Shank Out Solenoid
0888	Ripper Lower Solenoid
0889	Ripper Raise Solenoid
1034	Pitch Forward Switch
1047	Single Tilt Solenoid
1197	Blade Lower Solenoid Valve
1198	Blade Raise Solenoid Valve
1199	VIDS Electronic Control Module
	VIDSControl MID 51
0096	Fuel Level Sensor
0296	Power Train Electronic Control Module (ECB)
0590	Engine Electronic Control Module
0596	Electronic Implement Control Module (EIC)
0600	Hydraulic Oil Temperature Sensor
0800	VIDS Monitor Module
0809	Speedometer/Tachometer
0811	Gauge (Quad) Cluster
0815	Message Center
0820	Keypad Data Link
1045	Power train Oil Temperature Sensor
1046	Power Train Filter Bypass Switch
1195	Hydraulic Filter Bypass Switch
1196	Kidney Loop Filter Bypass Switch

[1] The CID is a diagnostic code that indicates which component is faulty.
[2] The MID is a diagnostic code that indicates which electronic control module diagnosed the fault.

Failure Mode Identifiers (FMI)[1] List

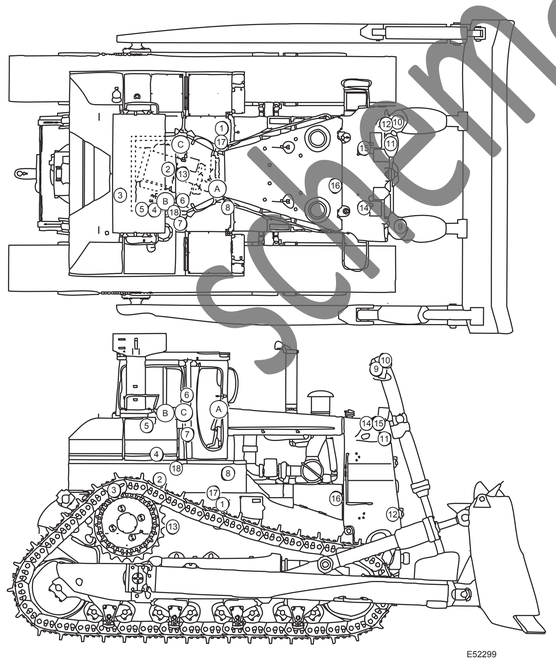
FMI No.	Failure Description
0	Data valid but above normal operational range.
1	Data valid but below normal operational range.
2	Data erratic, intermittent, or incorrect.
3	Voltage above normal or shorted high.
4	Voltage below normal or shorted low.
5	Current below normal or open circuit.
6	Current above 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.
14	Parameter failures.
15	Parameter failures.
16	Parameter not available.
17	Module not responding.
18	Sensor supply fault.
19	Condition not met.
20	Parameter failures.

[1]The FMI is a diagnostic code that indicates what type of failure has occurred.

Connector Location

Connector Number	Schematic Location	Machine Location
CONN 1 Code Plug	A-8	B
CONN 2	A-6	C
CONN 3	A-6	C
CONN 4	E-6	18
CONN 5	C-5	18
CONN 6	C-5	18
CONN 7	C-6	18
CONN 8	A-2	14
CONN 9	D-3	17
CONN 10	C-1	A
CONN 11	E-2	16
CONN 12	E-3	17
CONN 13	F-1	15

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



Machine Harness Connector And Component Locations

Off Machine Switch Specification

Part No.	Function	Actuate	Deactuate	Contact Position
156-1382	Electro/Hydraulic Filter Bypass Switch	276 kPa ± 28 (40 ± 4 psi)	179 kPa MIN (26 psi)	Normally Closed
9X-7781	Fan Reture Filter Bypass Switch	210 ± 70 kPa (30±l0psi)	-	Normally Open

Resistor, Sender and Solenoid Specifications

Part No.	Component Description	Resistance (Ohms)[1]
134-2540	Resistor - Terminator 1 & 2	120
3E-8848	Sensor - Torque Converter	1000 - 1200
3E-8574	Solenoid Valve - Ripper Enable	34.3 ± 1.7
109-3032	Solenoid Valve - Pitch Regenerate	34.3 ± 1.7
3E-9205	Solenoid - Single Tilt Coil	24.90

[1] At room temperature unless otherwise noted.

Related Electrical Service Manuals

Title	Form Number
Implement Electronic Control	SENR9457
VIDS	SENR9413

Component Location

Component	Schematic Location	Machine Location
Blade Control Handle	C-6	B
Control - VIDS	C-4	5
Keypad - VIDS	B-5	6
Light - Console	A-5	6
Magneto Strictive (Left)	F-1	10
Magneto Strictive (Right)	B-1	9
Operating Function Status Indicator	A-5	6
Power Converter (24V to 1 5V)	F-2	11
Resistor - Termination 1	D-6	18
Resistor - Termination 2	D-5	18
Ripper Control Handle	B-6	B
Sensor - Lift Cylinder Pos (Left)	F-1	10
Sensor - Lift Cylinder Pos (Right)	B-2	9
Sensor - Main Pump Pressure	F-9	1
Sensor - Ripper Raise/Lower Sensor	B-6	B
Solenoid - Blade Lower/Float (E2)	E-8	2
Sensor - Shank In/Out Sensor	B-6	B
Sensor - Tilt Pump Pressure	F-4	1
Sensor - Torque Converter Speed	F-3	13
Solenoid - Blade Lower (E2)	E-8	2
Solenoid - Blade Raise (E3)	E-8	2
Solenoid - Blade Tilt (Left) (E4)	E-9	2
Solenoid - Blade Tilt (Right) (E5)	E-8	2
Solenoid - Implement Lockout (EI)	E-8	2
Solenoid - Ripper Enable	E-9	3
Solenoid - Ripper Lower (E7)	E-9	2
Solenoid - Ripper Raise (E6)	E-9	2
Solenoid - Ripper Shank In (E9)	E-9	2
Solenoid - Ripper Shank Out (E8)	E-9	2
Switch - Electro/Hydraulic Valve Filter/Bypass	B-2	8
Switch - Fan Return Filter Bypass	B-2	7
Switch - Front Floods	C-2	A
Switch - Implement Lockout	A-6	B
Switch - Ripper Auto Stow	B-6	6
Switch - Pitch Back (Blade Control handle)	-	-
Switch - Pitch Forward (Blade ControlHandle)	-	-
Switch - Pitch Forward Trigger (Blade ControlHandle)	-	-
Switch - Mode Select (Blade Control Handle)	-	-
Switch - Manual Select (Blade ControlHandle)	-	-
Valve - Dual Tilt	F-2	12
Valve - Pitch Regenerate	F-2	12
VIDS Message Center	C-1	A

Machine location are repeated for components located close together.
A = Operator Compartment - Dash
B = Operator Compartment - Right Console
C = Operator Compartment - Left Console

CATERPILLAR®

SENR9455
July 1998

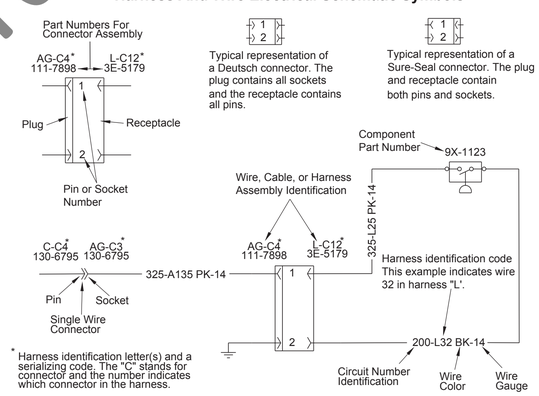
Schematic

D11R Carrydozer Track Type Tractor Electrical System

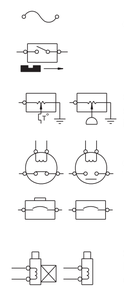
9XR1-UP

Printed in U.S.A.

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.

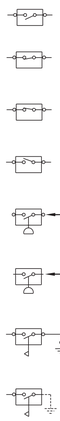
SENDER - A component that is used with a temperature or pressure gauge. The sender measures the temperature or pressure. Its resistance changes to give an indication to the gauge of the temperature or pressure.

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.

Electrical Schematic Symbols And Definitions



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.