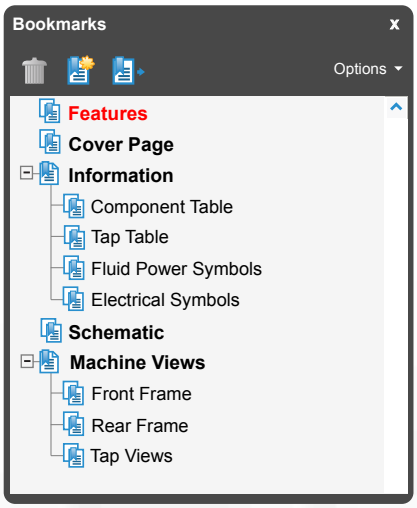
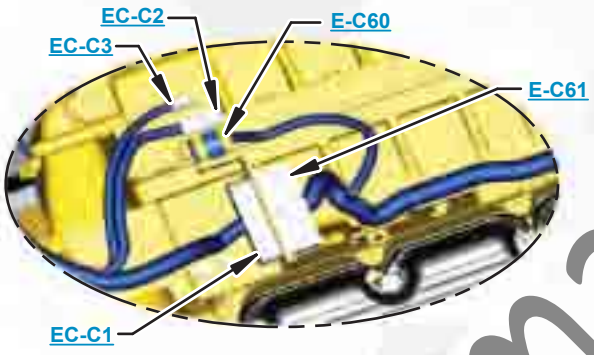
INTERACTIVE SCHEMATIC



The Bookmarks panel will allow you to quickly navigate to points of interest.

This document is best viewed at a screen resolution of 1024 X 768.

To set your screen resolution do the following:
RIGHT CLICK on the **DESKTOP**.
Select **PROPERTIES**.
CLICK the **SETTINGS TAB**.
MOVE THE SLIDER under **SCREEN RESOLUTION** until it shows **1024 X 768**.
CLICK OK to apply the resolution.



Click on any text that is BLUE and underlined. These are hyperlinks that can be used to navigate the schematic and machine views.

VIEW ALL CALLOUTS

When only one callout is showing on a machine view this button will make all of the callouts visible. This button is located in the top right corner of every machine view page.

HOTKEYS (Keyboard Shortcuts)		
	FUNCTION	**KEYS**
	Zoom In	"CTRL" / "+"
	Zoom Out	"CTRL" / "-"
	Fit to Page	"CTRL" / "0" (zero)
	Hand Tool	"SPACEBAR" (hold down)
	Find	"CTRL" / "F"

CATERPILLAR®

UENR2529-03
August 2014

Schematic

950H and 962H Wheel Loader IT62H Integrated Toolcarrier Electrical System

950H:	962H:	IT62H:
N1A4215-UP	N4A2060-UP	M5G479-UP
M1G2111-UP	M3G679-UP	
K5K2188-UP	K6K517-UP	

Volume 1 of 2: Chassis
Volume 2 of 2: Cab

Printed in U.S.A.

COMPONENT LOCATION
Volume 1 of 2 - CHASSIS

Component	Schematic Location	Machine Location
AIH	F-9	1
Alarm - Backup	G-13	2
Alternator	H-9	3
Arc Suppressor - A/C	B-11	3
Arc Suppressor - Quick Coupler	F-1	4
Arc Suppressor - Secondary Steering	I-8	5
Arc Suppressor - Start Relay	H-12	6
Batteries	J-10	7
Block Asm.	J-10	7
Breaker - AIH	H-12	6
Breaker - Belly Guard Actuator	I-12	6
Breaker - Hood Actuator	I-12	6
Breaker - Main	H-12	6
Breaker - Running Lamp	I-12	6
Breaker - Start	H-12	6
Breaker - Unswitched Bus (Cab)	H-12	6
Control - Engine	F-12	8
Control - Hood Raise/Lower	I-10	6
Motor - Autolube Pump	B-4	9
Motor - Belly Guard	J-12	10
Motor - Front Washer	C-4	11
Motor - Fuel Priming Pump	A-10	1
Motor - Hood Actuator	H-13	12
Motor - Rear Washer	C-4	11
Motor - Secondary Steering	H-8	5
Motor - Starter	I-9	13
Relay - AIH	F-10	1
Relay - Backup	G-13	63
Relay - Main	H-12	6
Relay - Secondary Steering Intermediate	I-8	5
Relay - Start	H-12	6
Resistor - CAN	D-8	8
Sender - Fuel Level	I-13	14
Sender - T/C Temperature	E-8	15
Sensor - Atmospheric Pressure	D-13	16
Sensor - Boost Pressure	D-13	16
Sensor - Coolant Temperature	D-13	17
Sensor - Front Axle Oil Temperature	I-2	18
Sensor - Fuel Pressure	C-13	1
Sensor - Hydraulic Oil Temperature	H-5	19
Sensor - Intake Manifold Air Temp	D-13	16
Sensor - Lift Cylinder Head End Pressure	J-3	20
Sensor - Lift Position	F-2	20
Sensor - Oil Pressure	D-13	17
Sensor - Rail Pressure	D-13	1
Sensor - Rear Axle Oil Temp.	A-9	21
Sensor - Rotary Lift Position	J-2	22
Sensor - Rotary Tilt Position	J-2	23
Sensor - Speed Timing Group	C-13	17
Sensor - Trans. Output Speed (Leading)	G-8	24
Sensor - Trans. Output Speed (Trailing)	G-8	24
Sensor - Transmission Input Speed	H-8	25
Sensor - Transmission Oil Temperature	H-8	26
Sensor - Turbo Inlet Pressure	F-10	27
Solenoid - A/C Clutch	A-11	3
Solenoid - Aux Third Function (Forward)	D-2, G-1	20
Solenoid - Aux Third Function (Rearward)	G-1	20
Solenoid - Axle Cooler Clutch	F-10	1
Solenoid - Dump Anti-Drift	D-2, H-3	20
Solenoid - Dump Prop	D-2, G-1	20
Solenoid - Lower Anti-Drift	G-3, C-2	20
Solenoid - Lower Prop	C-2, G-1	20
Solenoid - Pilot Hydraulic Supply	C-2, G-1	20
Solenoid - Quick Coupler	E-1	4
Solenoid - Rack Back Prop	D-2, H-1	20
Solenoid - Raise Prop	C-2, G-1	20
Solenoid - Ether Aid	D-7	29
Solenoid - Variable Speed Fan	H-9	28
Solenoids - Cylinder Head (1 - 6)	E-14	30
Solenoids - Ride Control (1-3)	D-2, G-3	20
Solenoids - Trans. Clutch	G-8	25
Switch - A/C Refrigerant	B-11	3
Switch - Belly Guard Actuator	J-11	6
Switch - Brake Oil Pressure	H-9	3
Switch - Bucket Position	F-1	32
Switch - Disconnect	J-10	6
Switch - Fork Position	F-1	32
Switch - Fuel Pressure	C-13	1
Switch - Fuel Priming Pump	A-11	1
Switch - Ground Level Shutdown	G-13	6
Switch - Hood Actuator	G-13	6
Switch - Hydraulic Filter Bypass Pressure	C-4	33
Switch - Park Brake Pressure	C-4	34
Switch - Primary Steering Pressure	I-7	5
Switch - Secondary Steering Pressure	H-7	5
Switch - Trans Filter Bypass	C-4	33

Check Part Number in the Part Manual for your Specific Machine

COMPONENT LOCATION
Volume 2 of 2 - CAB

Component	Schematic Location	Machine Location
Alarm - Action	E-12	45
Alarm - Implement Audible Alert	E-12	45
Alarm - Quick Coupler	E-1	46
Arc Suppressor - Forward Horn	G-6	47
Control - Dimmer	E-12	45
Control - Implement	F-10	49
Control - Payload Control System	E-4	45
Control - Transmission Control	J-14	51
Converter - Voltage (10A)	F-12	51
Diode - Hazard LED Panel	G-1	53
Display - Groeneveld Autolube	F-6	48
Flasher - 24V	E-12	45
Fuse - Block	C-12	45
Fuse - Thermal Cut Out	J-12	51
Gateway	H-9	51
Guage - Quad	H-1	52
Indicator - Center Dash	I-1	52
Indicator - Left Hand Panel	J-1	52
Indicator - Right Hand Panel	I-1	52
Joystick - Implement Control	H-6	47
Messenger	D-5	50
MSS Transponder Reader Module	F-3	52
Monitor	E-6	48
Monitor - Rear Vision	H-11	62
Motor - Blend Door Actuator	J-12	51
Motor - Blower	J-12	51
Motor - Front Wiper	H-1	53
Motor - Rear Wiper	I-11	54
Radio - Product Link	I-9	51
Relay - Axle Cooler	D-12	45
Relay - Forward Cab Floodlamp	D-12	45
Relay - Forward Horn	D-12	45
Relay - Heated Mirrors Timer	D-12	45
Relay - Rear Floodlamp	D-12	45
Relay - Variable Pitch Fan	F-12	45
Resistor A/C (1)	J-11	45
Resistor A/C (2)	J-11	45
Resistor - Blower Motor	J-12	51
Resistor - CAN	C-4	45
Resistor - CAN A	I-4	52
Sensor - 3rd Lever Position	F-5	47
Sensor - Left Hand Brake Pedal	G-1	55
Sensor - Lift Lever Position	F-5	47
Sensor - Throttlle Position	G-1	56
Sensor - Tilt Lever Position	F-5	47
Switch - Auto/Manual Gear Select	D-3	46
Switch - Autodig Kickout Set	D-1	46
Switch - Autodig Mode	E-3	46
Switch - Autodig Mode Select	D-1	46
Switch - Autodig Trigger	G-5	47
Switch - Beacon	G-3	52
Switch - Blower Fan Speed	D-6	48
Switch - Bucket/Fork Select	E-2	46
Switch - Cat Mon Sys Mode Select	D-6	48
Switch - Dimmer	H-1	57
Switch - Downshift	F-5	47
Switch - Fine Modulation	F-6	47
Switch - Forward Horn	H-3, G-2	58
Switch - Forward Horn 2	G-5	47
Switch - Forward Horn 3	H-6	47
Switch - Front Intermittent Wiper/Washer	C-6	48
Switch - Hazard Lamp	G-3	52
Switch - Heated Mirror	E-2	46
Switch - Heated Mirror	I-3	52
Switch - HVAC Select	E-6	48
Switch - HVAC Temperature Select	D-6	48
Switch - Implement Lockout	G-6	47
Switch - Key Start	F-3	52
Switch - Lift Tilt Kickout Set	E-1	46
Switch - Neutral Override	D-2	46
Switch - PCS Clear Store	C-4	47
Switch - PCS Reweigh Zero	D-5	62
Switch - Quick Coupler	E-1	46
Switch - Rear Wiper/Washer	D-3	46
Switch - Remote FNR	H-6, G-5	47
Switch - Reversing Fan	D-1	46
Switch - Ride Control	D-2	46
Switch - Running Lamp	J-3	52
Switch - Secoondary Steering Test	D-2	46
Switch - Stop Lamp	G-1	55
Switch - Third Function Control Flow	I-3	52
Switch - Third Function Diverter	F-6	47
Switch - Turn Signal	H-2	58
Switch - Variable Shift Control	E-3	46
Tach/Speedometer	I-1	52
Thermostat	I-12	51
Transmission Gear Selector	H-3	58
Wheel Gp - Steering	G-2	58

Check Part Number in the Part Manual for your Specific Machine

CONNECTOR LOCATION
Volume 1 of 2 - CHASSIS

Connector Number	Schematic Location	Machine Location
CONN 1	C-14	2
CONN 2	C-14, D-14	2
CONN 3	I-14, J-14	35
CONN 4	I-14, J-14	35
CONN 5	C-12	16
CONN 6	C-13	16
CONN 7	E-13	1
CONN 8	J-10	6
CONN 9	A-9	36
CONN 10	D-8	37
CONN 11	E-8	13
CONN 12	F-8	13
CONN 13	I-7	5
CONN 14	B-6	38
CONN 15	C-6	34
CONN 16	G-5	39
CONN 17	G-5	39
CONN 18	F-5	39
CONN 19	E-5	39
CONN 20	H-4	40
CONN 21	I-2, I-3, F-2	41
CONN 22	H-3, H-2, E-2	22
CONN 23	J-3	42
CONN 24	E-2	20
CONN 25	I-3, E-2	20
CONN 26	F-2	43

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.

CONNECTOR LOCATION
Volume 2 of 2 - CAB

Connector Number	Schematic Location	Machine Location
CONN 16	E-14	54
CONN 17	E-14	59
CONN 18	D-14	54
CONN 19	C-14	54
CONN 27	F-12	45
CONN 28	F-12	45
CONN 29	J-11	51
CONN 30	G-10	51
CONN 31	G-7, H-7	47
CONN 32	G-7, H-7	47
CONN 33	F-7	45
CONN 34	E-5	48
CONN 35	J-6	60
CONN 36	J-5	61
CONN 37	I-6	60
CONN 38	I-5	62
CONN 39	H-3	52
CONN 40	G-3, H-3	52
CONN 41	G-2	58
CONN 42	F-3	52
CONN 43	F-2	52
CONN 44	H-1	57
CONN 45	G-1	55

CID / MID / FMI
Volume 1 of 2 - CHASSIS

Component Identifiers (CID[1]) Module Identifier (MID[2]) Engine Control System (MID No. 036)	
CID	**Component**
0001	Fuel Injector Solenoid #1
0002	Fuel Injector Solenoid #2
0003	Fuel Injector Solenoid #3
0004	Fuel Injector Solenoid #4
0005	Fuel Injector Solenoid #5
0006	Fuel Injector Solenoid #6
0041	ECM 8V DC Supply
0042	Injector Actuation Valve
0091	Throttle Sensor
0094	Fuel Pressure Sensor
0100	Oil Pressure Sensor
0110	Engine Coolant Temperature Sensor
0164	Injector Actuation Pressure Sensor
0168	Electrical Power Supply
0172	Intake Manifold Air Temperature Sensor
0190	Engine Speed Sensor
0253	Personality Module
0261	Engine Speed Sensor
0262	5 Volt Sensor Supply
0267	Engine Shutdown Switch
0268	Check Programmable Parameters
0269	Sensor Power Supply
0274	Atmospheric Pressure Sensor
0275	Right Turbo Inlet Pressure Sensor
0283	Filter Restrict Lamp
0291	Engine Cooling Fan Solenoid
0296	Transmission ECM
0342	Camshaft Position Sensor
0596	Implement Control
1639	Machine Security System
1785	Intake Manifold Pressure Sensor

[1] The CID is a diagnostic code that indicates which circuit is faulty.

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

Failure Mode Identifiers (FMI)[1]	
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.

Event Codes Engine Control	
Event Code	**Condition**
E096	High Fuel Pressure
E172	High Air Filter Restriction
E194	High Exhaust Temperature
E198	Low Fuel Pressure
E360	Low Engine Oil Pressure
E361	High Engine Coolant Temperature
E362	Engine Overspeed
E390	Fuel Filter Restriction
E441	Idle Elevated to Increase Battery Voltage
E539	High Intake Manifold Air Temperature

CID / MID / FMI
Volume 2 of 2 - CAB, Page 1 of 2

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

Caterpillar Monitoring System
(MID No. 030)

CID	Component
0096	Fuel Level Sender
0100	Engine Oil Pressure Sensor
0110	Engine Coolant Temperature Sensor
0177	Torque Converter Oil Temperature Sensor
0248	Data Link
0263	Sensor Power Supply
0271	Action Alarm
0324	Action Lamp
0600	Hydraulic Oil Temperature Sensor
0819	Display Data Link
0821	Display Power Supply
0826	T/C Oil Temperature Sensor
0830	Brake Oil Temperature Sensor

Payload Control System
(MID No. 074)

CID	Component
0248	CAT Data Link
0364	Head End Lift Cylinder Pressure Sensor
0591	PCS EEPROM
0769	Rod End Lift Cylinder Pressure Sensor
1964	Lift Position Sensor

Electronic Transmission Control System
(MID No. 081)

CID	Component
0041	8 Volt DC Supply
0168	Electrical System Voltage
0177	Transmission Oil Temperature Sensor
0190	Engine Speed Sensor
0262	5 Volt DC Supply
0268	Programmed Parameter Fault
0367	Ride Control Switch
0368	Transmission Auto/Manual Switch
0444	Start Relay
0562	Electronic Monitoring System
0585	Transmission Output Speed Sensor 1
0590	Engine Control Module
0596	Implement Control
0623	Directional Switch
0627	Parking Brake Pressure Sw.
0672	Transmission Input Speed Sensor
0673	Transmission Output Speed Sensor 2
0702	Lever Switch (Transmission Shifting/Direction)
0737	Left Brake Pedal Position Sensor
0793	Primary Steering Pressure Switch
0794	Secondary Steering Pressure Switch
0795	Secondary Steering Relay
0967	Machine Application
1326	ECM Location Code
1400	Rear Axle Oil Cooler Solenoid
1401	Reverse Solenoid
1402	Forward Solenoid
1403	Fourth Speed Clutch
1404	Third Speed Clutch
1405	Second Speed Clutch
1406	First Speed Clutch
1521	Part-Throttle Autoshift Selector Switch
1960	Ignition Key Reader
2129	Ride Control Solenoid (1)
2274	Transmission Direction Switch #2
2347	Ride Control Solenoid (2)
2684	Ride Control Solenoid (3)

Electronic Implement Control
(MID No. 082)

CID	Component
0041	8 Volt DC Supply
0168	Electrical System Voltage
0268	Programmed Parameter Fault
0296	Transmission Control
0350	Lift Linkage Position Sensor
0351	Tilt Linkage Position Sensor
0352	Lift Lever Position Sensor
0353	Tilt Lever Position Sensor
0354	Raise Solenoid
0355	Lower Solenoid
0356	Dump Solenoid
0357	Rackback Solenoid
0358	Pilot Pressure Solenoid
0364	Lify Cylinder Head End Oil Pressure Sensor
0365	Kickout Set Switch
0487	3rd Lever Position Sensor
0490	Implement Lockout Switch
0491	3rd Function Forward Solenoid
0492	3rd Function Rearward Solenoid
0562	Caterpillar Monitoring System
0590	Engine Electronic Control Module
0965	Autodig Dig Mode Switch
0967	Machine Application
1187	Continuous Flow Rocker Switch
1324	Autodig Operation Mode Select Switch
1325	Autodig Trigger Switch
1326	ECM Location Code
1592	Autodig Kickout Set Switch
1639	Machine Security System ECM
1718	Fine Modulation Switch
2326	Lower Anti-Drift Solenoid Valve
2328	Dump Anti-Drift Solenoid Valve

Product Link Radio
(MID No. 122)

CID	Component
0168	Electrical System Voltage
0254	Electronic Control Module
0269	Sensor Power Supply
1250	Remote Communication Module
1251	Alternator "R" Terminal

Machine Security System
(MID No. 124)

CID	Component
0168	Electrical System Voltage
0248	Data Link
0817	ECM Internal Backup Battery
1391	Theft Deterent Output Driver #1
1392	Theft Deterent Output Driver #2

[1] The CID is a diagnostic code that indicates which circuit is faulty.

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

Failure Mode Identifiers (FMI)[1]	
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.

SPECIFICATIONS AND RELATED MANUALS
Volume 1 of 2 - CHASSIS

Resistor, Sender and Solenoid Specifications			
Part No.	**Component Description**		**Resistance (Ohms)[1]**
134-2540	Resistor:	CAN Data Link	120 ± 12
145-7028	Sender:	T/C Temperature	1249.5 @ 20°C (68°F)
148-2350	Solenoid:	Variable Speed Fan	5.0 ± 0.3
163-0872	Solenoid:	A/C Compressor Clutch	17.6 ± 0.6
183-7595	Solenoid:	Axle Cooler Clutch	5.0 ± 0.3
225-0300	Solenoid:	Pilot Hydraulic Supply	38.12 ± 1.9
241-5895	Solenoid:	Auto/Reverse Fan	33.75 ± 1.6
245-4659	Sender:	Fuel Level	Empty: 240 - 250 Full: 26 - 33
244-3114	Solenoid:	Transmission Clutch	8.7 ± 0.4
239-1134	Solenoid:	Start Aid	20.0
262-5265	Solenoid:	Dump Anti-Drift Lower Anti-Drift Ride Control 3	33.8
285-5730	Solenoid:	Aux 3rd Function Forward Aux 3rd Function Rearward Dump Prop Racback Prop Raise Prop	5.0 ± 0.3

[1] At room temperature unless otherwise noted.

Off Machine Switch Specification				
Part No.	**Function**	**Actuate**	**Deactuate**	**Contact Position**
114-5333	A/C (High / Low) Pressure	275 to 1750 kPa[1] (39.9 to 253.8 psi)	170 ± 55 kPa (25 ± 8 psi)	Normally Open[2]
117-7773	Hydraulic Filter Bypass Pressure	138 ± 28 kPa (20 ± 4 psi)	89 ± 20 kPa (12.9 ± 2.9 psi)	Normally Closed
174-4312	Park Brake Pressure	8270 kPa MAX (1200 psi MAX)	6890 ± 345 kPa (1000 ± 50 psi)	A-B, Normally Open A-C, Normally Closed
175-3244	Brake Oil Pressure	10700 kPa MAX (1550 psi MAX)	8960 ± 537 kPa (1300 ± 79 psi)	A-B, Normally Open A-C, Normally Closed
230-5771	Primary Steering Presure Secondary Steering Pressure	1200 kPa MAX (174.0 psi MAX)	700 ± 100 kPa (102 ± 14.5 psi)	A-B Normally Open A-C Normally Closed
258-0883	Fuel Differential Pressure	110.3 ± 13.8 kPa (16 ± 2 psi)	69 kPa MIN (10 psi MIN)	Normally Closed

[1] 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).

[2] Contact postion at the contacts of the harness connector.

Related Electrical Service Manuals	
Title	**Form Number**
Cross Reference for Electrical Connectors:	REHS0970
Alternator: 177-9953 197-8820	SENR4130
Electric Starting Motor: 207-1517	SENR3581
Engine Control:	RENR9319

SPECIFICATIONS AND RELATED MANUALS
Volume 2 of 2 - CAB

Off Machine Switch Specification				
Part No.	**Function**	**Actuate**	**Deactuate**	**Contact Position**
3E-5464	A/C Thermostat	-1.1 ± 0.8°C (30 ± 1.4°F)	2.2 ± 0.8°C (36 ± 1.4°F)	Normally Closed

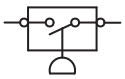
Resistor, Sender and Solenoid Specifications		
Part No.	**Component Description**	**Resistance (Ohms)[1]**
9G-1950	Resistor: Blower Motor Speed	Overall: 2.0 ± 0.1 Tap 1.0 ± .05
134-2540	Resistor: CAN	120 ± 12

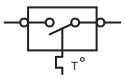
[1] At room temperature unless otherwise noted.

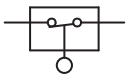
Related Electrical Service Manuals	
Title	**Form Number**
Cross Reference for Electrical Connectors:	REHS0970
Machine Security System:	RENR2462
Product Link Radio:	RENR7911
Power Train Control:	RENR8846
Implement Control:	RENR8858
Caterpillar Monitoring System:	SENR1394
Payload Control System:	RENR6293

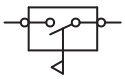
HARNESS and WIRE
Electrical Schematic Symbols

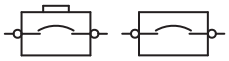
Symbols


Pressure Symbol


Temperature Symbol

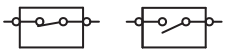

Level Symbol

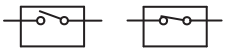

Flow Symbol

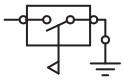

Circuit Breaker Symbol

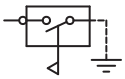
Symbols and Definitions

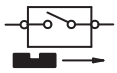

Fuse: A component in an electrical circuit that will open the circuit if too much current flows through it.

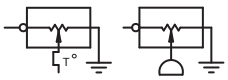

Switch (Normally Open): A switch that will close at a specified point (temp, press, etc.). The circle indicates that the component has screw terminals and a wire can be disconnected from it.

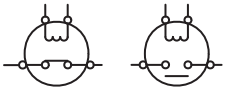

Switch (Normally Closed): A switch that will open at a specified point (temp, press, etc.). No circle indicates that the wire cannot be disconnected from the component.

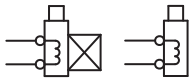

Ground (Wired): This indicates that the component is connected to a grounded wire. The grounded wire is fastened to the machine.

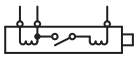

Ground (Case): This indicates that the component does not have a wire connected to ground. It is grounded by being fastened to the machine.


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.

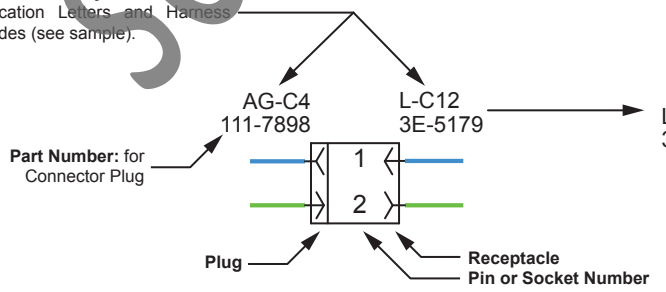

Relay (Magnetic Switch): A relay is an electrical component that is activated by electricity. It has a coil that makes an electromagnet when current flows through it. The electromagnet can open or close the switch part of the relay.

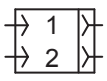

Solenoid: A solenoid is an electrical component that is activated by electricity. It has a coil that makes an electromagnet when current flows through it. The electromagnet can open or close a valve or move a piece of metal that can do work.


Magnetic Latch Solenoid: A magnetic latch solenoid is an electrical component that is activated by electricity and held latched by a permanent magnet. It has two coils (latch and unlatch) that make electromagnet when current flows through them. It also has an internal switch that places the latch coil circuit open at the time the coil latches.

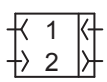
Harness and Wire Symbols

Wire, Cable, or Harness Assembly Identification: Includes Harness Identification Letters and Harness Connector Serialization Codes (see sample).

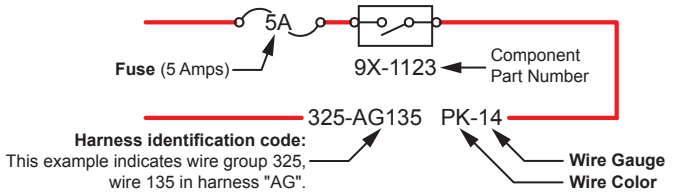


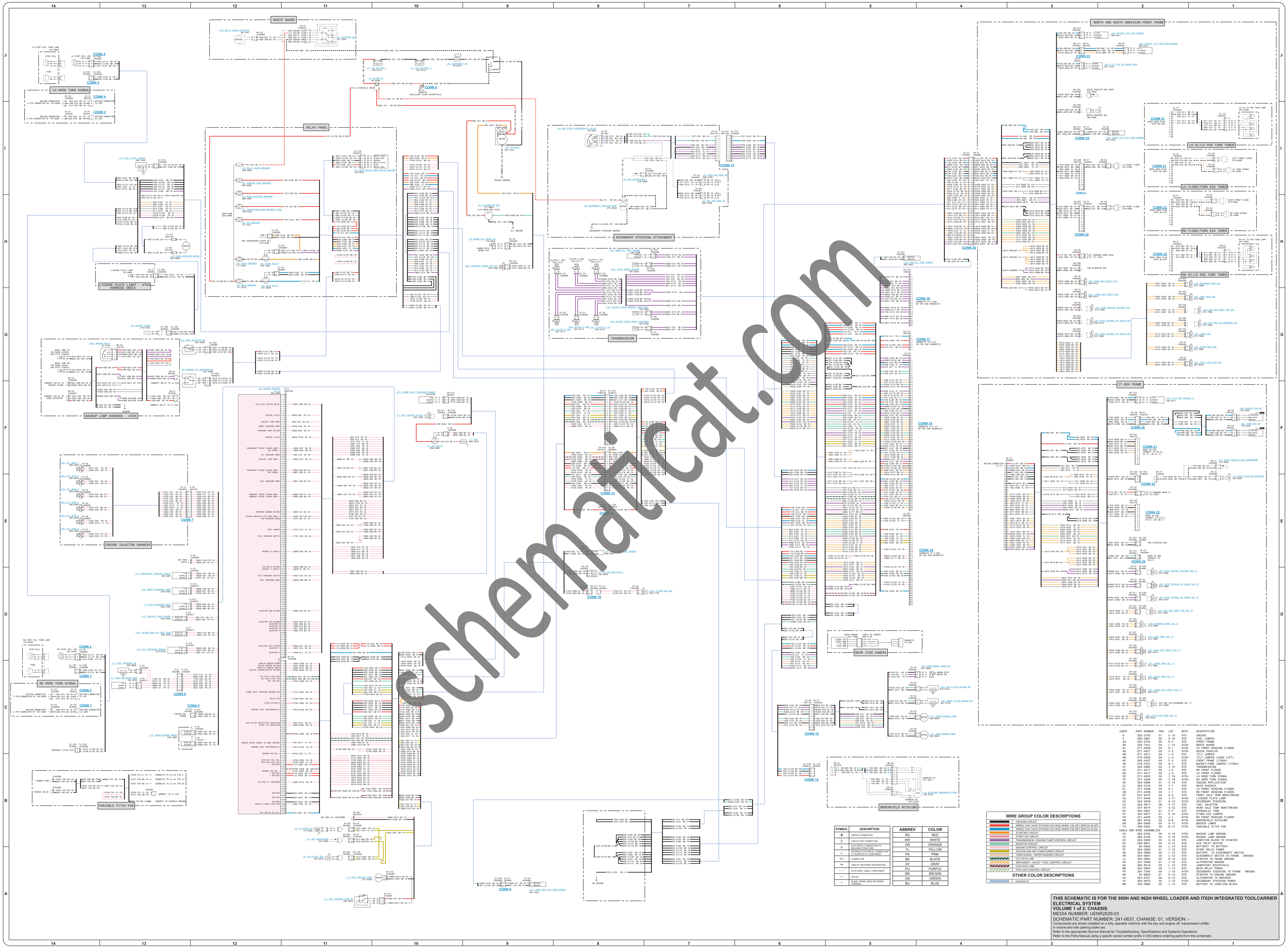


Deutsch connector: Typical representation of a Deutsch connector. The plug contains all sockets and the receptacle contains all pins.



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





SYMBOL	DESCRIPTION
(dot at junction)	CIRCUIT CONNECTED
+	CIRCUIT NOT CONNECTED
(ground symbol)	ELECTRICAL CONNECTION TO MACHINE STRUCTURE
(ground symbol)	INTERNAL ELECTRICAL CONNECTION TO SURFACE OF COMPONENT
→)—	CONNECTOR
H#	CIRCUIT GROUPING DESIGNATION
- - -	ATCH WIRE, CABLE, COMPONENT
o—o	SPLICE
o	BLADE, SPADE, RING OR SCREW TERMINAL

ABBREV	COLOR
RD	RED
WH	WHITE
OR	ORANGE
YL	YELLOW
PK	PINK
BK	BLACK
GY	GRAY
PU	PURPLE
BR	BROWN
GN	GREEN
BU	BLUE

WIRE GROUP COLOR DESCRIPTIONS

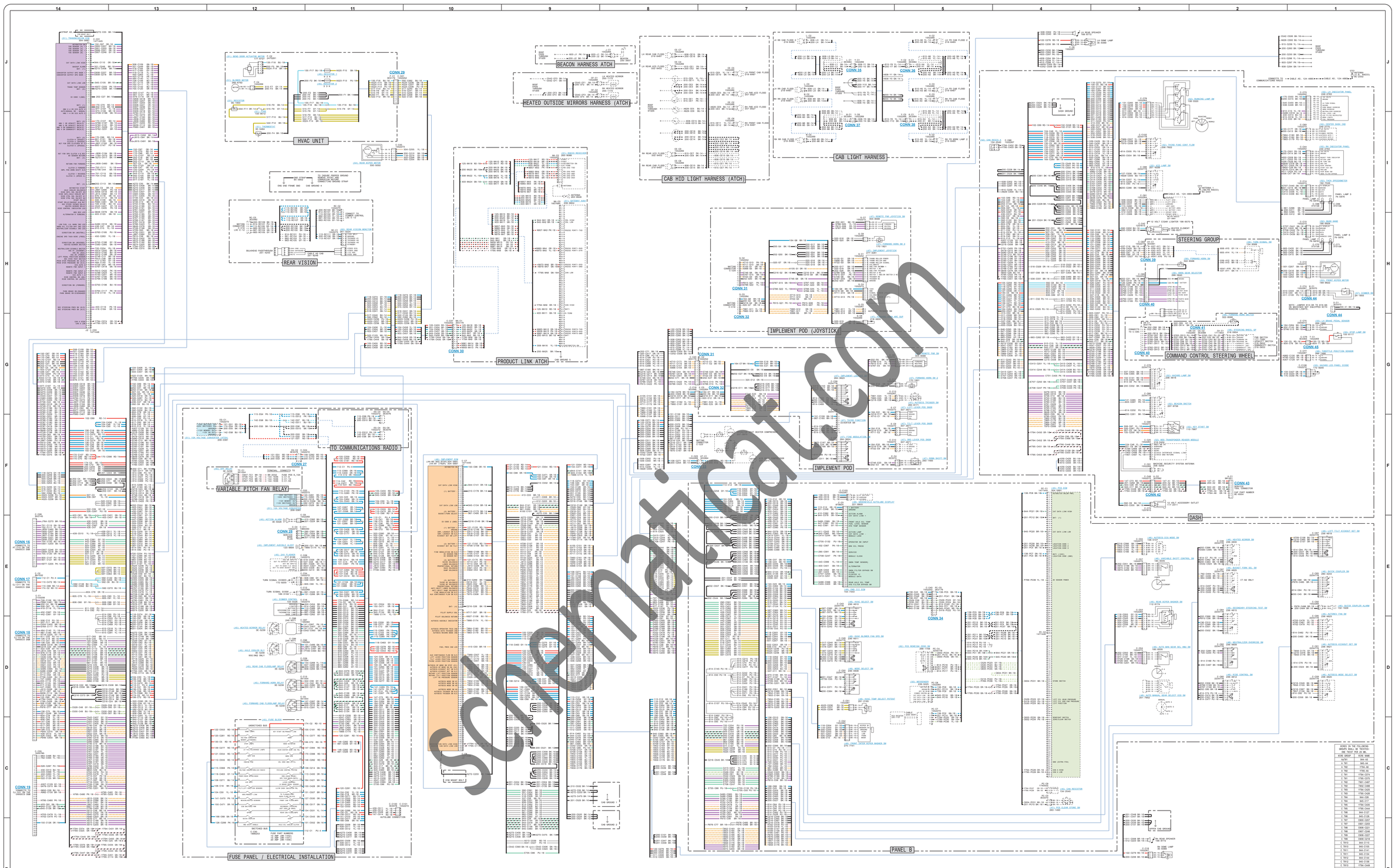
- GROUND CIRCUIT
- WIRES THAT HAVE SYSTEM VOLTAGE WHEN THE KEY SWITCH IS OFF
- WIRES THAT HAVE SYSTEM VOLTAGE WHEN THE KEY SWITCH IS ON
- STARTING CIRCUIT
- START AID CIRCUIT
- TRANSMISSION / ENGINE PUMP CONTROL CIRCUIT
- MONITOR CIRCUIT
- ENGINE CONTROL CIRCUIT
- HEATER AND AIR CONDITIONER CIRCUIT
- TURN SIGNAL / WIPER WASHER CIRCUIT
- CAT DATA LINK
- IMPLEMENT / VALVE / TOOL CONTROL CIRCUIT
- CAN DATA LINK
- PAYLOAD CONTROL CIRCUIT

OTHER COLOR DESCRIPTIONS

- HIGHWAYS

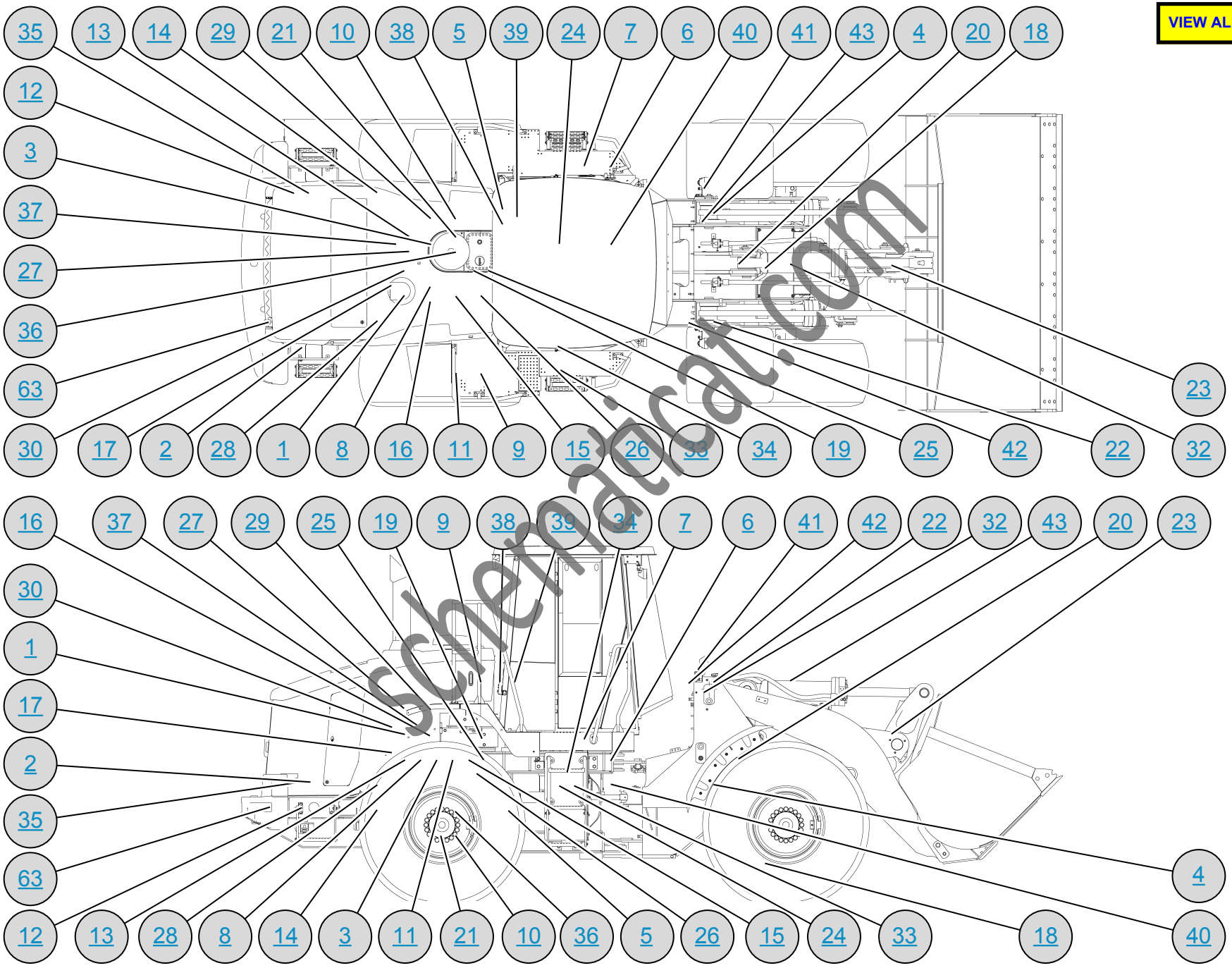
IDENT	PART NUMBER	CHG	LOC	NOTE	DESCRIPTION
K	322-2733	01	E-15	STD	ENGINE
X	260-4861	02	D-16	STD	FUEL JUMPER
AG	354-2733	00	K-4	STD	FRONT FRAME
AH	344-7241	00	L-15	ATCH	WASTE GUARD
AJ	271-4029	03	K-1	ATCH	LH FRONT ROADING FLOODS
AK	271-4027	03	F-2	ATCH	QUICK COUPLER
AM	271-4011	04	L-3	STD	TILT JUMPER
AM	275-0025	05	L-3	ATCH	TILT JUMPER (HIGH LIFT)
AP	265-4407	03	F-4	STD	FRONT FRAME (IT62H)
AR	218-3791	03	G-1	STD	BUCKET/FORK JUMPER (IT62H)
AT	324-0685	02	I-10	STD	TRANSMISSION
AV	271-4017	02	J-3	STD	RH FRONT FLOODS
AW	271-4017	02	J-3	STD	LH FRONT FLOODS
CE	271-4035	00	I-18	ATCH	LH HOOD TURN SIGNAL
CF	271-4036	00	C-18	ATCH	RH HOOD TURN SIGNAL
CH	324-0695	01	C-14	STD	ENGINE APPLICATION
CJ	354-2734	00	F-7	STD	MAIN CHASSIS
CL	271-4038	02	K-1	STD	LH FRONT ROADING FLOODS
CM	271-4039	02	I-1	STD	RH FRONT ROADING FLOODS
CP	247-8475	03	K-2	STD	FRONT AXLE TEMP MONITORING
CU	271-9448	00	I-17	ATCH	LICENSE PLATE LAMP
CV	324-0676	01	K-10	ATCH	SECONDARY STEERING
CX	222-5917	06	F-17	STD	FUEL INJECTOR
CY	247-8474	01	A-12	STD	REAR AXLE TEMP MONITORING
EA	324-0691	01	C-7	STD	HYDRAULIC TANK
ET	324-0677	01	E-10	ATCH	ETHER AID JUMPER
FR	271-4030	02	J-1	ATCH	RH FRONT ROADING FLOODS
GR	281-8742	00	B-8	ATCH	GROENEVELD AUTOLUBE
KW	284-5693	00	H-17	ATCH	BACKUP LAMPS
TH	306-5352	00	B-17	ATCH	VARIABLE PITCH FAN
CABLE AND WIRE ASSEMBLIES					
AX	284-5702	00	H-18	ATCH	BACKUP LAMP GROUND
AY	284-5702	00	H-18	ATCH	BACKUP LAMP GROUND
CC	324-0683	00	K-12	STD	JUNCTION BLOCK TO STARTER
EC	229-8851	02	G-13	STD	AIR INLET HEATER
EE	8V-0622	00	L-13	STD	BATTERY+ TO BATTERY-
FF	324-0693	01	I-15	STD	START RELAY POWER
GG	324-0680	02	L-13	STD	BATTERY- TO DISCONNECT SWITCH
HH	324-0681	00	L-12	STD	DISCONNECT SWITCH TO FRAME GROUND
JJ	324-0684	00	K-12	STD	STARTER TO FRAME GROUND
KC	247-4389	01	J-12	STD	ALTERNATOR GROUND
KK	290-6516	03	L-13	STD	JUMPSTART RECEPTACLE
MM	324-0694	00	I-15	STD	MAIN RELAY POWER
PP	297-7294	00	J-10	ATCH	SECONDARY STEERING TO FRAME GROUND
RR	8Y-9603	01	K-12	STD	STARTER TO ENGINE GROUND
UU	324-0701	00	K-12	STD	ALTERNATOR TO BREAKER
VV	324-0675	02	J-10	ATCH	SECONDARY STEERING POWER
WW	324-0682	02	L-14	STD	BATTERY TO JUNCTION BLOCK

THIS SCHEMATIC IS FOR THE 950H AND 962H WHEEL LOADER AND IT62H INTEGRATED TOOLCARRIER ELECTRICAL SYSTEM
VOLUME 1 of 2: CHASSIS
MEDIA NUMBER: UENR2529-03
SCHEMATIC PART NUMBER: 241-0637, CHANGE: 01, VERSION: -
Components are shown installed on a fully operable machine with the key and engine off, transmission shifter in neutral and with parking brake set.
Refer to the appropriate Service Manual for Troubleshooting, Specifications and Systems Operations.
Refer to the Parts Manual using a specific serial number prefix in SIS before ordering parts from this schematic.



MACHINE HARNESS CONNECTOR AND COMPONENT LOCATIONS

VIEW ALL CALLOUTS



MACHINE HARNESS CONNECTOR AND COMPONENT LOCATIONS

VIEW ALL CALLOUTS