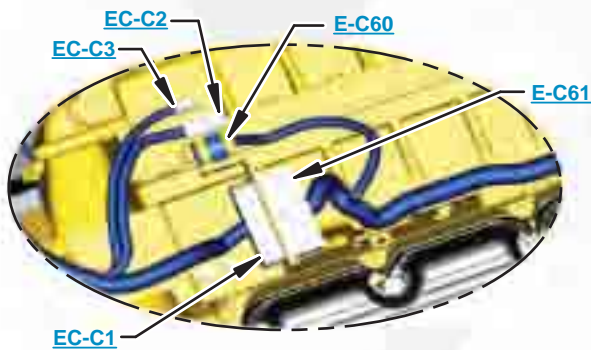




This document is best viewed at a screen resolution of 1024 X 768.

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.

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



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"



Schematic

834H Wheel Tractor,
836H Landfill Compactor And
988H Wheel Loader
Electrical System

834H:
BTX300-999

836H:
BXD600-999

988H:
BXY1900-3999

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

COMPONENT LOCATION

Volume 1 of 2 - CAB WIRING



Component	Schematic Location	Machine Location	Component	Schematic Location	Machine Location
Actuator - Blend Door	F-18	1	Switch - A/C Selector	C-5	10
Actuator - Water Valve	F-18	1	Switch - Auto Lube Manual	J-5	14
Alarm - Action	J-10	2	Switch - Auto/Manual Gear Select	E-5	6
Battery Backup	A-12	3	Switch - Blower	D-5	6
Camera - Rear View	L-8	4	Switch - Cab Stair Lamp	B-5	15
Control - Dimmer	L-9	5	Switch - Economy Mode	H-16	12
Control - Navigator	F-12	6	Switch - Forward Horn 2	K-16	10
Control - Operator Monitor	C-8	2	Switch - Front HID Flood Lamp	B-5	15
Control - STIC	F-8, G-16	5	Switch - Front Inter. Wiper	F-5	6
Control - Water Valve Blend Door	E-18	1	Switch - Hazard Lamp	I-5	3
Control - WLPCS	H-13	7	Switch - Hydraulic Lockout	K-16	12
Converter - 10A	H-5	8	Switch - Implement Lockout	K-11	10
Converter - 12/24 DC	A-13	8	Switch - Key	G-9	2
Converter - 20A	J-3	8	Switch - Kickout Set	K-5	14
Ferrite	C-11	8	Switch - Loose Material Mode	K-5	14
Flasher - 24v	J-10	9	Switch - L.U.C. Control	F-5	16
Gage - Quad	H-8	2	Switch - Operator Mode Select	H-9	2
Joystick	L-11	10	Switch - Payload Store	K-16	12
Keypad - WLPCS	G-13	7	Switch - Rear Wiper	D-5	16
Monitor - Rear Vision Camera	L-2	7	Switch - Reduced Rim Pull	L-4	14
Motor - Blower	F-18	10	Switch - Retarder	G-8	10
Motor - Front Wiper	E-8	8	Switch - Reverse Fan	J-5	8
Motor - Rear Wiper	K-9	1	Switch - Ride Control	F-5	7
Radio - CAES (TC 900C)	B-12	3	Switch - Rotary Beacon	E-5	6
Receiver - CAES	B-12	3	Switch - Running Lamp	A-4	16
Resistor - Blower Motor	F-18	3	Switch - Steering Lock	G-16	17
Sensor - L.H. Brake Pedal	A-6	11	Switch - Steering Wheel Horn	F-8	5
Sensor - Lift Lever Position	J-16	12	Switch - Stop Lamp	A-6	2
Sensor - Third Lever Position	J-16	12	Switch - Temperature Select	C-5	2
Sensor - Throttle Position	B-7	13	Switch - Third Function	I-16	12
Sensor - Tilt Lever Position	J-16	12	Switch - Throttle Lock	G-9	5
Solenoid - Lift Lever Kickout Detent	J-16	12	Switch - Throttle Lock Disengage	B-7	13
Solenoid - Lift Lever Lower Kickout Detent	J-16	12	Switch - Throttle Lock Resume	K-16, L-12	5
Solenoid - Tilt Lever Bucket Detent	J-16	12	Switch - Throttle Lock Set	K-12, I-16	5
Speedometer/Tachometer	G-8	2	Switch - Turn Signal	G-9, J-11	16
Switch - ABP Blade Height Kickout Set	J-11	10	Thermostat	E-17	18
Switch - ABP Enable	J-11	10			

COMPONENT LOCATION

Volume 2 of 2 - CHASSIS WIRING



Component	Schematic Location	Machine Location	Component	Schematic Location	Machine Location
Alarm - Back Up	I-15	21	Sensor - Hydraulic Oil Temperature	B-4	47
Alternator	H-12	22	Sensor - Impeller Clutch Pressure	A-6	48
Arc Suppressor	J-12	23	Sensor - Intake Manifold Air Temperature	L-18	37
Bateries	G-12	24	Sensor - Lift Cylinder Head End Pressure ¹	J-4	49
Breaker - Engine Control	D-14	23	Sensor - Lift Cylinder Rod Pressure ¹	J-4	50
Breaker - Key Switch	C-14	25	Sensor - Lift Position ¹	J-1	51
Breaker - Main	D-14	23	Sensor - Oil Pressure	I-17	52
Breaker - Roof A/C	D-14	26	Sensor - Rear Axle Oil Temperature	C-5	53
Breaker - Running Lamp	C-14	23	Sensor - Tilt Position ¹	J-1	54
Breaker - Start Relay	D-14	23	Sensor - Torque Converter Output Speed	A-7	48
Control - Engine ECM	L-18	27	Sensor - Torque Converter Temperature	A-7	55
Control - Gateway	E-17	28	Sensor - Xmsn Oil Temperature	K-12	56
Control - Implement	C-11	29	Sensor - Xmsn Output Speed (Leading)	L-12	56
Control - Power Train	F-11	29	Sensor - Xmsn Output Speed (Trailing)	L-12	56
Fuse Panel	B-16	29	Sensor - Variable Hydraulic Oil Pump Pressure	A-7	48
Junction Block (1)	B-13	30	Solenoid - A/C Clutch	I-13	23
Junction Block (2)	A-13	30	Solenoid - Auto Lube	L-15	44
Motor - Condenser Blower 1	F-6	31	Solenoid - Axle Cooler Fan ¹	A-6	57
Motor - Condenser Blower 2	F-6	31	Solenoid - Hydraulic Pilot Supply ^{1 2}	D-2, H-2	58
Motor - Front Washer Pump	K-9, L-10	32	Solenoid - Impeller Clutch	A-6	48
Motor - Fuel Priming Pump	K-12	33	Solenoid - Implement Pump	A-7	48
Motor - Guideon Cleaner	H-5	34	Solenoid - Lift Prop	A-1, D-1, I-2	59
Motor - Quick Lube Pump	G-8	35	Solenoid - Lower Prop	A-1, C-1, I-2	59
Motor - Rear Washer Pump	L-10	36	Solenoid - L.U.C.	A-6	59
Motor - Starter	G-13	37	Solenoids - Retarder 1-3	I-16	60
Radio - Product Link	E-5	38	Solenoid - Reversing Fan	J-15	61
Relay - Backlight	E-16	39	Solenoid - Ride Control ¹	L-2	62
Relay - Cab HID HAL	F-16	39	Solenoid - Start Aid	J-9	52
Relay - Condenser	F-6	40	Solenoid - Third Valve RE ¹	G-2, H-2	63
Relay - Front Cab Flood	F-16	39	Solenoid - Tilt Forward Prop	C-2	59
Relay - Front Machine Flood	E-16	39	Solenoid - Tilt Left Prop	C-2	59
Relay - Horn (2)	D-16	39	Solenoid - Tilt Right Prop	D-2	59
Relay - Machine HID HAL	E-16	39	Solenoid - Tipback Prop	D-2	59
Relay - Main	C-14	28	Solenoid - Variable Speed Fan	L-14	64
Relay - Rear Halogen HID	F-16	39	Solenoids - Cylinder Head 1-6	I-16	23
Relay - Starter Motor	B-14	28	Solenoids - Transmission	L-13	28
Sender - Fuel Level	B-2, H-4, L-10	41	Switch - A/C Pressure	I-13	23
Sensor - A.B.P.	A-1, D-2	42	Switch - Auto Lube Grease Level	L-15	65
Sensor - Atmospheric Pressure	J-17	23	Switch - Brake Oil Pressure	B-4	66
Sensor - Auto Lube Pressure ¹	K-5	43	Switch - Disconnect	G-11	22
Sensor - Auto Lube Pump Pressure ¹	L-15	44	Switch - Fuel Differential Pressure	J-16	67
Sensor - Boost Pressure	J-17	37	Switch - Fuel Priming Pump	J-13	67
Sensor - Camshaft Speed Timing	L-18	22	Switch - Ground Level Shutdown	J-15	68
Sensor - Coolant Temperature	K-18	22	Switch - Ground Level Stairway Lamp	J-15	69
Sensor - Crankshaft Speed Timing	L-18	45	Switch - Hydraulic Pilot Oil Filter	B-4	35
Sensor - Front Axle Oil Temperature	F-2, L-2	46	Switch - Park Brake	G-8	66
Sensor - Fuel Pressure	J-16	27	Switch - Supplemental Steering Pressure	K-10	70
Sensor - Fuel Temperature	J-16	27	Switch - Transmission Filter Bypass	K-9, L-10	71

¹ Installed on 988H model only.

² Installed on 830H models only.

CONNECTOR LOCATION

Volume 1 of 2 - CAB WIRING



Connector Number	Schematic Location	Machine Location
CONN 1	G-18	17
CONN 2	K-14, J-18	10
CONN 3	A-16	19
CONN 4	B-16	19
CONN 5	D-16	19
CONN 6	E-16	19
CONN 7	F-16	9
CONN 8	G-14	7
CONN 9	D-14	10
CONN 10	C-13	18
CONN 11 CAES Service Conn	C-12	18
CONN 12 WLPCS Customer Data Conn	H-12	7
CONN 13 CMS Code Plug	B-10	10
CONN 14 Service Port Conn	J-10	10
CONN 15 Aux Power Port Conn	L-9	20
CONN 16 CMS Service Mode Plug	K-9	10
CONN 17	F-8	17
CONN 18	D-7	13
CONN 19	C-7	13
CONN 20	A-6	5
CONN 21	J-3, I-5	8
CONN 22	H-5, L-2	8

CONNECTOR LOCATION

Volume 2 of 2 - CHASSIS WIRING



Connector Number	Schematic Location	Machine Location
CONN 3	C-6	39
CONN 4	D-6	39
CONN 5	B-10	39
CONN 6	C-10	39
CONN 23 Timing/Calibration Conn	L-18	64
CONN 24	J-17	28
CONN 25	I-17	67
CONN 26	D-16	72
CONN 27	I-14	21
CONN 28	J-14	24
CONN 29	L-14	44
CONN 30	L-11	72
CONN 31	L-11	72
CONN 32	J-11	67
CONN 33	I-11	67
CONN 34 Aux Power Receptacle	H-11	73
CONN 35	E-10	39
CONN 36	F-10	39
CONN 37	J-10	24
CONN 38	A-8	74
CONN 39	A-8	74
CONN 40	G-8	39
CONN 41	I-8	27
CONN 42	L-8	75
CONN 43	B-5	75
CONN 44	C-5	76
CONN 45	E-6	28
CONN 46	E-6	22
CONN 47	I-6, G-6, A-3	77
CONN 48	H-6	28
CONN 49	H-6	34
CONN 50	L-5	78
CONN 51	G-3, F-3, K-5, L-5	78
CONN 52	J-4	79
CONN 53	F-4	72
CONN 54 ²	G-4	80
CONN 55 ²	A-3, G-4	80
CONN 56 ¹	L-3	49
CONN 57	L-3, E-3	46
CONN 58	L-3	78
CONN 59	E-3, L-2, K-3	78
CONN 60 ¹	J-3	58
CONN 61 ²	A-2, D-2	41

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.

¹ Installed on 988H model only.

² Installed on 830H models only.



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
0168	Electrical System Voltage
0254	Electronic Control Module
0350	Lift Linkage Position Sensor
0364	Lift Cylinder Head End Pressure Sensor
0769	Lift Cylinder Rod End Pressure Sensor
0818	ECM Internal Backup Battery
0820	Keypad Data Link
Electronic Transmission Control System (MID No. 081)	
CID	Component
0041	8 Volt DC Supply
0138	Reduced Rimpull Selection Switch (988H only)
0168	Electrical System Voltage
0177	Transmission Oil Temperature Sensor
0190	Engine Speed Sensor
0363	Machine Ride Control Actuator (988H only)
0367	Ride Control Switch (988H only)
0378	Machine Autolube Solenoid (988H only)
0379	Machine Autolube Pressure Sensor (988H only)
0444	Start Relay
0562	Electronic Monitoring System
0585	Transmission Output Speed Sensor 1
0590	Engine Control Module
0596	Implement Control (988H only)
0603	T/C Impeller Clutch Pressure Sensor
0623	Directional Switch
0626	Steering/Transmission Lock Switch
0627	Parking Brake Pressure Switch
0650	Harness Code
0670	Left Pedal Position Sensor
0672	Transmission Input Speed Sensor
0673	Transmission Output Speed Sensor 2
0678	T/C Impeller Clutch Solenoid
0679	T/C Lockup Clutch Solenoid
1401	Reverse Solenoid
1402	Forward Solenoid
1403	Fourth Speed Clutch
1404	Third Speed Clutch
1405	Second Speed Clutch
1406	First Speed Clutch

Electronic Implement Control (MID No. 082)	
CID	Component
0139	Tip Backward Solenoid (834H, 836H only)
0140	Tip Forward Solenoid (834H, 836H only)
0168	Electrical System Voltage
0268	Programmed Parameter Fault
0296	Transmission Control
0350	Lift Linkage Position Sensor (988H only)
0351	Tily Linkage Position Sensor (988H only)
0352	Lift Lever Position Sensor
0353	Tilt Lever Position Sensor
0354	Raise Solenoid
0355	Lower Solenoid
0356	Dump Solenoid #1 (988H only)
0357	Rackback Solenoid #1 (988H only)
0358	Pilot Pressure Solenoid
0359	Raise Detent Electromagnet (988H only)
0361	Rackback Detent Electromagnet (988H only)
0365	ABP Kickout Set Switch
0487	3rd Lever Position Sensor (988H only)
0489	Implement Function Select Switch
0490	Implement Lockout Switch
0491	3rd Function Forward Solenoid (988H only)
0492	3rd Function Rearward Solenoid (988H only)
0497	Tilt Right Solenoid (834H, 836H only)
0498	Tilt Left Solenoid (834H, 836H only)
0499	Implement Variable Hyd Oil Pump Solenoid (988H only)
0562	Caterpillar Monitoring System
0590	Engine Electronic Control Module
0591	Internal Memory
0650	Harness Code
0864	Variable Implement Pump Oil Pressure Sensor (988H only)
1393	Driver Enable Line
1400	Axle Oil Cooler Fan Bypass Solenoid
1667	Loose Material Switch (988H only)
1964	Lift Cylinder Position Sensor (834H, 836H only)
2119	ABP Enable Switch (834H, 836H only)

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	
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.

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



Engineering Codes for CAESultra	
Code	Condition
ENG 10	Master cfg file not found.
ENG 12	Cfg - A directory was not found.
ENG 14	Cfg - Invalid machine dimension.
ENG 16	Cfg - No vehicles identified.
ENG 18	Cfg - Invalid GPS antenna location.
ENG 20	Cfg - Invalid application usage
ENG 22	Cfg - Invalid GPS log configuration.
ENG 24	Cfg - Invalid internal units.
ENG 26	Cfg - Can't delete specified files.
ENG 28	Cfg - Can't find GPS input file.
ENG 30	Cfg - Open/create data file error
ENG 32	Cfg - Invalid machine type/ID.
ENG 38	Invalid security key.
ENG 40	Can't open cfg file for read.
ENG 42	Can't open cfg file for write.
ENG 44	Can't create a file cfg file.
ENG 46	All data not saved on shutdown.
ENG 48	Can't create diagnostics file.
ENG 50	Can't open diagnostics file.
ENG 52	Backlight heater on.
ENG 60	No radio comm port initialized.
ENG 62	Invalid radio message status.
ENG 64	Radio message queue is full.
ENG 70	Can't find serial .dll file.
ENG 72	Invalid serial .dll file.
ENG 74	Unrecognized command to Interface Board.
ENG 76	Unrecognized command from Interface Board.
ENG 78	Communications port to Interface Board is not initialized
ENG 79	On board communications fault.
ENG 80	Memory allocation error.
ENG 82	Memory reallocation error.
ENG 90	Can't open/create design file.
ENG 92	Can't open/create update file.
ENG 94	New update file created.
ENG 95	File cfg file incomplete.
ENG 96	Backup config file incomplete.
ENG 97	File receive cancelled wrong CRC.

Machine Codes	
Machine	Code
824H	47
825H	48
826H	49

Monitoring System Service Modes	
Service Mode	Number
Operator Mode Sequence	0
Harness Code	1
Numeric Readout	2
Service	3
Digital Tattletale	4
Units	5
Calibration 1	6
Calibration 2	7

Monitoring System Operator Modes	
Operator Mode	Number
Service Meter	0
Odometer - Machine Travel Distance	1
Tachometer	2
Scrolling (Diagnostic)	3



PCS Message Explanation Table		
PCS Message	Cause	Correction
"LOWER"	Bucket position is too high to start the weigh.	Lower the bucket until the "Lower" message disappears.
"LIFT TOO SLOW"	Lift speed was too slow.	Repeat lift with increased engine RPM.
"REW-1"	Paused lift in weigh range	Repeat lift and maintain constant engine RPM throughout the lift. Ensure lift kickout is set above end-of-weigh range.
"REW-2"	Machine motion or bounce caused excessive pressure spikes.	Repeat lift with the following suggestions: 1. Lower the start of lift position to a point closer to the ground. 2. Hold the machine at a constant engine RPM through the entire weigh range. 3. Lift with a lower engine RPM. 4. Lift with the lift lever in Detent. Ease the lever into the Detent position. 5. Ensure that the machine is not moving at excessive speeds or over rough ground. 6. Lift with the machine stationary, or with minimal motion.
"REW-3"	Lift speed changed too much during the lift. This is typically caused by lowering engine RPM at the end of the lift as the machine nears the truck.	Repeat lift with a more constant engine RPM.
"REW-4"	Lift was too slow.	Repeat lift with increased engine RPM.
"LIFT BUCKET 10 TIMES"	After the machine has rested four or more hours, this message will appear.	Perform a minimum of ten lifts in order to warm the machine linkage and hydraulics.
"RE-ZERO PCS"	Automatic PCS reminder to Re-zero. This will reduce errors caused by pressure drift.	1. Lower the bucket to the ground. 2. Rack the empty bucket back fully. 3. Raise the engine speed to typical lifting speed. 4. Gently pull the lift lever into the detent position. 5. Maintain constant engine speed throughout the lift. 6. When the weight has been displayed, press the "ZERO" key (3).
"CALC" ¹	The system is in the process of calculating the payload.	No action is required.

¹This message is not typical. For additional information on this message, read the section that is entitled "CALC" in the text below.



Component Identifiers (CID ¹) Module Identifier (MID ²)	
Engine ECM (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
0091	Throttle Sensor
0094	Fuel Pressure Sensor
0100	Oil Pressure Sensor
0102	Boost Pressure Sensor
0110	Engine Coolant Temperature Sensor
0168	Electrical Power Supply
0172	Intake Manifold Air Temperature Sensor
0174	Fuel Temperature Sensor
0190	Engine Speed Sensor
0261	Engine Speed Sensor
0262	5 Volt Sensor Supply
0267	Engine Shutdown Switch
0268	Check Programmable Parameters
0274	Atmospheric Pressure Sensor
0291	Engine Cooling Fan Solenoid
0296	Transmission ECM
0342	Camshaft Position Sensor
0485	Engine Fan Reversing Solenoid
0788	Engine Retarder Selector Switch
1248	Retarder Solenoid
1330	Right Brake Pedal Switch
1589	Turbo Inlet Air Pressure Sensor
1639	Machine Security System
2417	Start Aid Solenoid
Electronic Transmission Control System (MID No. 081)	
CID	Component
0041	8 Volt DC Supply
0138	Reduced Rimpull Selection Switch (988H only)
0168	Electrical System Voltage
0177	Transmission Oil Temperature Sensor
0190	Engine Speed Sensor
0363	Machine Ride Control Actuator (988H only)
0367	Ride Control Switch (988H only)
0378	Machine Autolube Solenoid (988H only)
0379	Machine Autolube Pressure Sensor (988H only)
0444	Start Relay
0562	Electronic Monitoring System
0585	Transmission Output Speed Sensor 1
0590	Engine Control Module
0596	Implement Control (988H only)
0603	T/C Impeller Clutch Pressure Sensor
0623	Directional Switch
0626	Steering/Transmission Lock Switch
0627	Parking Brake Pressure Switch
0650	Harness Code
0670	Left Pedal Position Sensor
0672	Transmission Input Speed Sensor
0673	Transmission Output Speed Sensor 2
0678	T/C Impeller Clutch Solenoid
0679	T/C Lockup Clutch Solenoid
1401	Reverse Solenoid
1402	Forward Solenoid
1403	Fourth Speed Clutch
1404	Third Speed Clutch
1405	Second Speed Clutch
1406	First Speed Clutch

Electronic Implement Control (MID No. 082)	
CID	Component
0139	Tip Backward Solenoid (834H, 836H only)
0140	Tip Forward Solenoid (834H, 836H only)
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0353	Tilt Lever Position Sensor
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0358	Pilot Pressure Solenoid
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0361	Rackback Detent Electromagnet (988H only)
0365	ABP Kickout Set Switch
0487	3rd Lever Position Sensor (988H only)
0489	Implement Function Select Switch
0490	Implement Lockout Switch
0491	3rd Function Forward Solenoid (988H only)
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0590	Engine Electronic Control Module
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0864	Variable Implement Pump Oil Pressure Sensor (988H only)
1393	Driver Enable Line
1400	Axle Oil Cooler Fan Bypass Solenoid
1667	Loose Material Switch (988H only)
1964	Lift Cylinder Position Sensor (834H, 836H only)
2119	ABP Enable Switch (834H, 836H only)

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	
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.

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

Event Codes For Engine ECM	
Event Code	Condition
E172	High Air Filter Restriction
E194	High Exhaust Temperature
E360	Low Engine Oil Pressure
E361	High Engine Coolant Temperature
E362	Engine Overspeed
E363	High Fuel Temperature
E390	Fuel Filter Restriction
E441	Idle Elevated to Increase Battery Voltage

SPECIFICATIONS AND RELATED MANUALS

Volume 1 of 2 - CAB WIRING



Resistor, Sender and Solenoid Specifications		
Part No.	Component Description	Resistance (Ohms)¹
9G-1 950	Resistor: Blower Speed	Overall 2.0 ± .1; Tap 1.0 ± .05
147-2577	Solenoid: Lift Lever Kickout Detent Lift Lever Lower Kickout Detent Tilt Lever Bucket Detent	74 ± 4

¹ At room temperature unless otherwise noted.

Related Electrical Service Manuals	
Title	Form Number
Caterpillar Monitoring System	SENR1394
Electronic Implement Control	RENR8699
Electronic Transmission Control	RENR8689
CAES ULTRA	RENR7892
Payload Control System	SENR6614

SPECIFICATIONS AND RELATED MANUALS

Volume 2 of 2 - CHASSIS WIRING



Resistor, Sender and Solenoid Specifications		
Part No.	Component Description	Resistance (Ohms) ¹
148-2350	Solenoid: Dump Implement Pump Raise Lower Tilt Forward Tilt Left Tilt Right Tip Back	5.0 ± 0.3
149-2610	Solenoid: Axle Cooler Fan Hydraulic Pilot Supply (988H)	32.6 ± 1.6
151-1399	Sender: Fuel Level (2) (3)	Empty: 95 ± 3.0 Full: 1.75 ± 1.75
152-8340	Solenoid: Ride Control	32.6 ± 1.6
157-8853	Sender: Fuel Level	Empty: 95 ± 3.0 Full: 1.75 ± 1.75
162-2191	Solenoid: Reversing Fan	32.6 ± 1.6
163-0869	Solenoid: Hydraulic Pilot Supply (830H)	32.6 ± 1.6
183-7595	Solenoid: Variable Speed Fan	5.0 ± 0.3
217-2708	Solenoid: Impeller Clutch	7.75 ± 1.0
218-0324	Solenoid: A/C Compressor Clutch	17.6±0.6
226-9622	Solenoid: Lockup Clutch	8.7 ± 0.4
239-1134	Solenoid: Start Aid	6
244-3114	Solenoids: Transmission Clutch	8.7 ± 0.4
253-0616	Solenoids: Injectors	1.06 ± 5%

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)	- -	Normally Open ²
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 Dual Charge V Pressure	10700 kPa MAX (1550 psi MAX)	8960 ± 537 kPa (1300 ± 79 psi)	A-B, Normally Open A-C, Normally Closed
253-2673	Hydraulic Pilot Oil Filter Pressure	148 ± 28 kPa (21.5 ± 4 psi)	69 kPa MIN (10 psi MIN)	Normally Closed
275-1253	Fuel Differential Pressure	110.3 ± 13.8 kPa (16 ± 2 psi)	69 kPa MIN (10 psi MIN)	Normally Closed
3E-6450	Supplemental Steering Pressure	1200 kPa MAX (174.0 psi MAX)	700 ± 100 kPa (102 ± 14.5 psi)	A-B Normally Open A-C 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 position at the contacts of the harness connector.

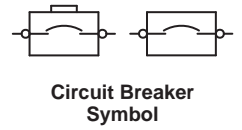
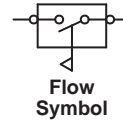
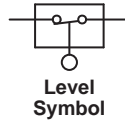
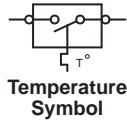
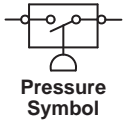
Related Electrical Service Manuals		
Title		Form Number
Alternator:	197-8820 (Denso HDB)	SENR4130
Electric Starting Motor:	237-1962 (Delco 50MT)	SENR3860
Engine Control:		RENR5033
Gateway PL1000T Communication ECM:		RENR7945
Electronic Implement Control:		RENR8699
Electronic Transmission Control:		RENR8689

HARNESS and WIRE

Electrical Schematic Symbols



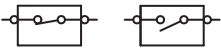
Symbols



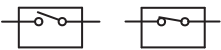
Symbols and Definitions



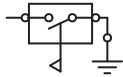
Fuse: A component in an electrical circuit that will open the circuit if too much current flows through it.



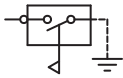
Switch (Normally Open): A switch that will close at a specified point (temp, press, etc.). The circle indicates that the component has screw terminals and a wire can be disconnected from it.



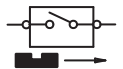
Switch (Normally Closed): A switch that will open at a specified point (temp, press, etc.). No circle indicates that the wire cannot be disconnected from the component.



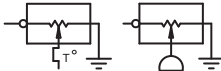
Ground (Wired): This indicates that the component is connected to a grounded wire. The grounded wire is fastened to the machine.



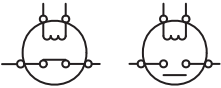
Ground (Case): This indicates that the component does not have a wire connected to ground. It is grounded by being fastened to the machine.



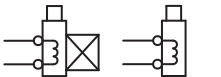
Reed Switch: A switch whose contacts are controlled by a magnet. A magnet closes the contacts of a normally open reed switch; it opens the contacts of a normally closed reed switch.



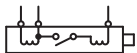
Sender: A component that is used with a temperature or pressure gauge. The sender measures the temperature or pressure. Its resistance changes to give an indication to the gauge of the temperature or pressure.



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.



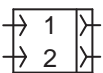
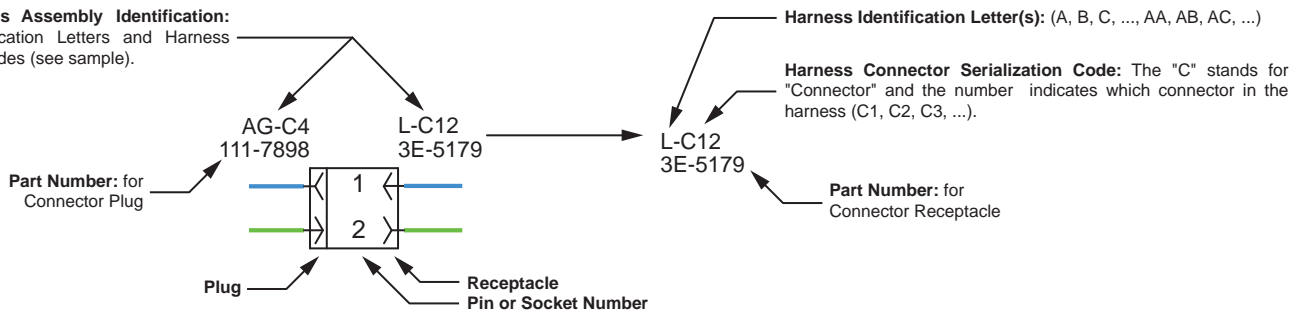
Solenoid: A solenoid is an electrical component that is activated by electricity. It has a coil that makes an electromagnet when current flows through it. The electromagnet can open or close a valve or move a piece of metal that can do work.



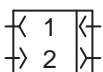
Magnetic Latch Solenoid: A magnetic latch solenoid is an electrical component that is activated by electricity and held latched by a permanent magnet. It has two coils (latch and unlatch) that make electromagnet when current flows through them. It also has an internal switch that places the latch coil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

Harness and Wire Symbols

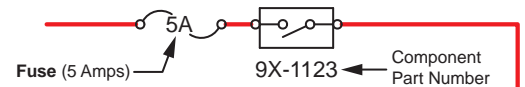
Wire, Cable, or Harness Assembly Identification: Includes Harness Identification Letters and Harness Connector Serialization Codes (see sample).



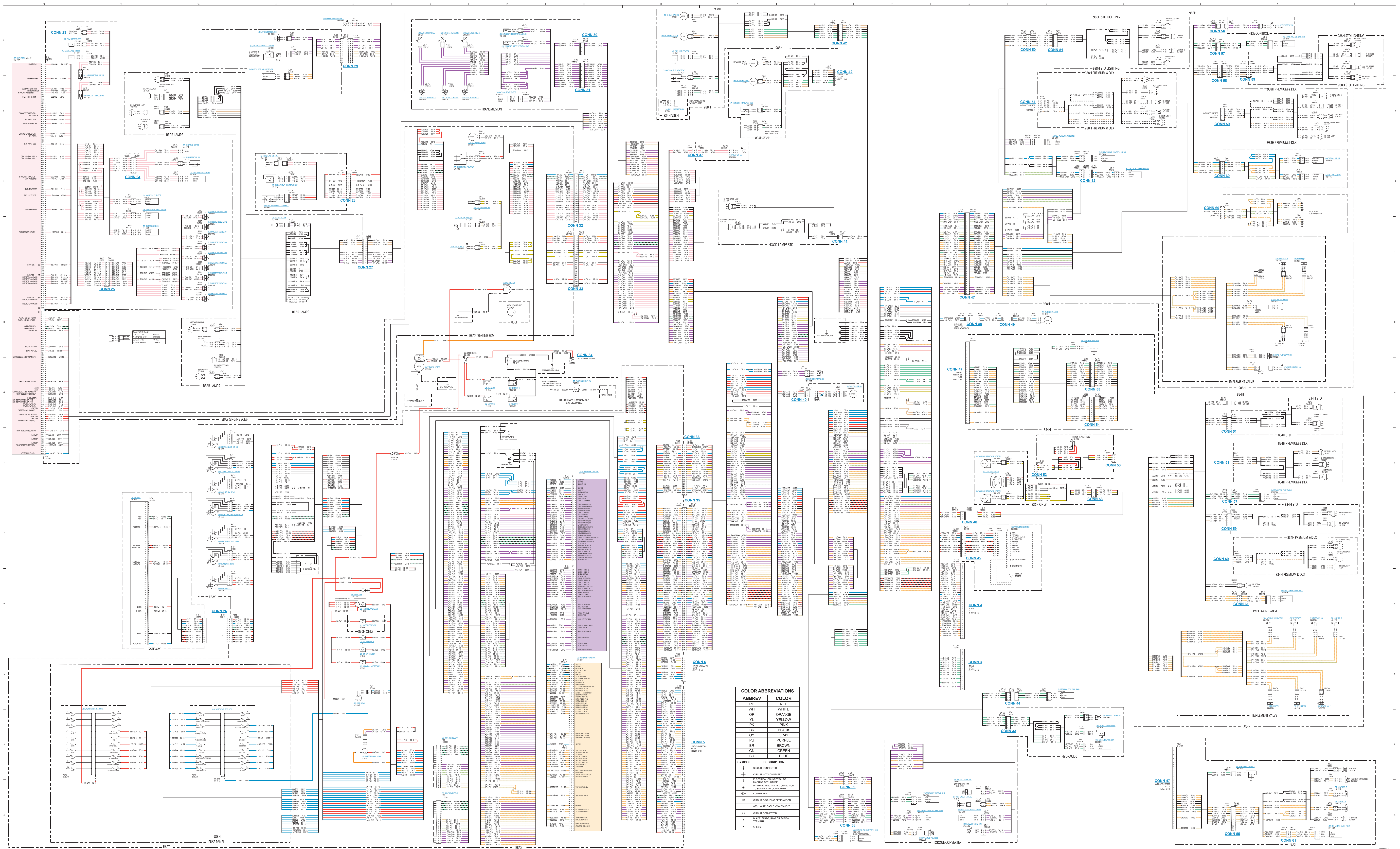
Deutsch connector: Typical representation of a Deutsch connector. The plug contains all sockets and the receptacle contains all pins.



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



Harness identification code: This example indicates wire group 325, wire 135 in harness "AG".



COLOR ABBREVIATIONS

ABBREVIATION	COLOR
RD	RED
WH	WHITE
OR	ORANGE
YL	YELLOW
PK	PINK
BLK	BLACK
GRY	GRAY
PUR	PURPLE
BRN	BROWN
GRN	GREEN
BLU	BLUE

SYMBOL DESCRIPTION

SYMBOL	DESCRIPTION
(Solid line)	CIRCUIT CONNECTED
(Dashed line)	CIRCUIT NOT CONNECTED
(Line with dots)	ELECTRICALLY CONNECTED TO TERMINAL OR DEVICE, RESPECTIVE TO ALL PORTALS OF COMPONENT
(Line with cross-hatch)	COMMON
(Line with diagonal hatching)	CIRCUIT GROUPING DESIGNATION
(Line with vertical hatching)	WIRE WIRE GAUGE COMPONENT
(Line with horizontal hatching)	WIRE CONNECTED TO FUSE PANEL OR FUSE BLOCK
(Line with diagonal hatching)	TERMINAL
(Line with horizontal hatching)	BRANCH

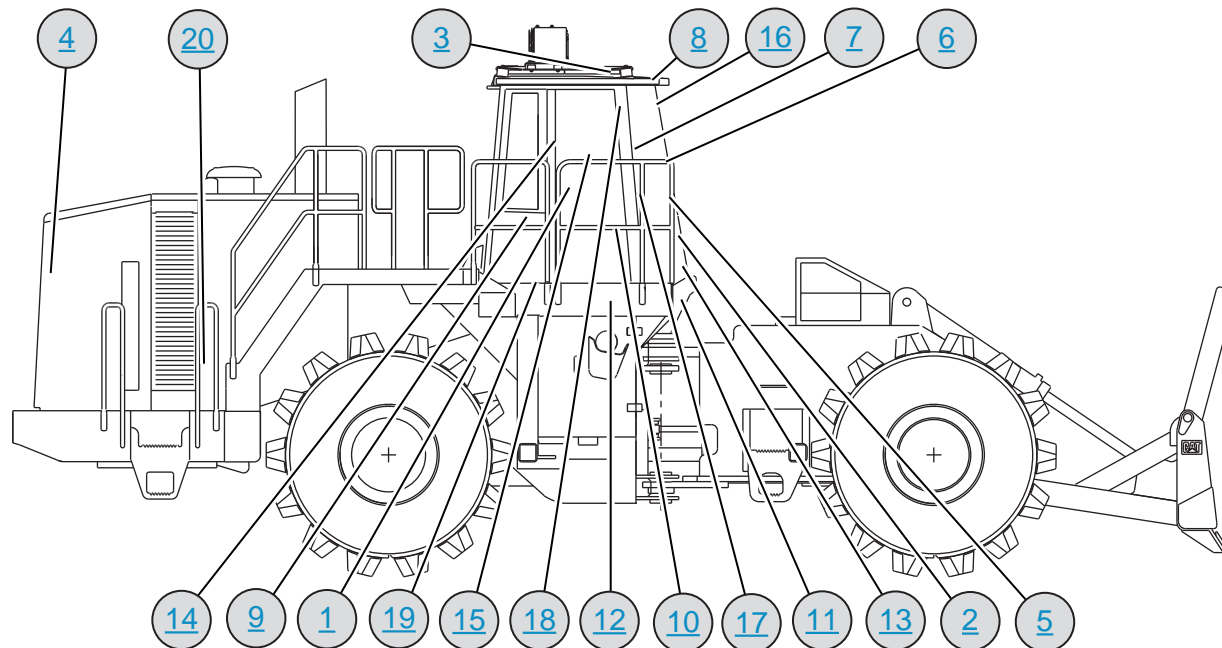
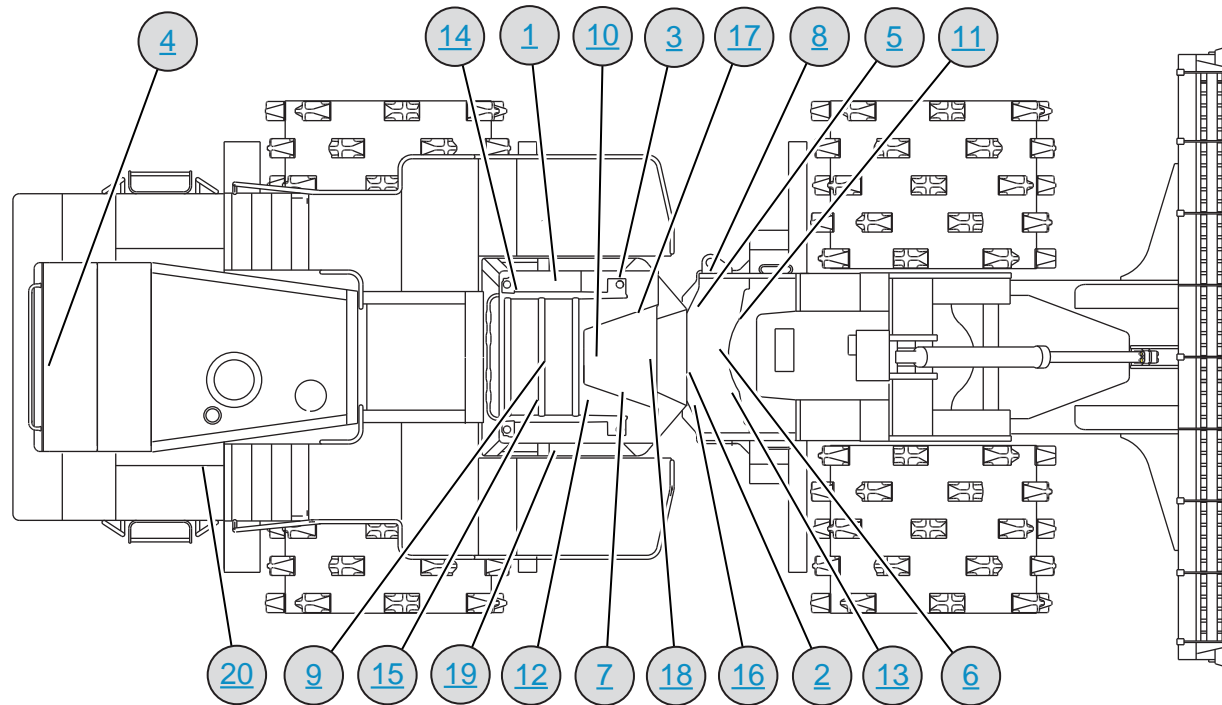
WIRE GROUP	DESCRIPTION
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WIRE GROUP COLOR DESCRIPTIONS

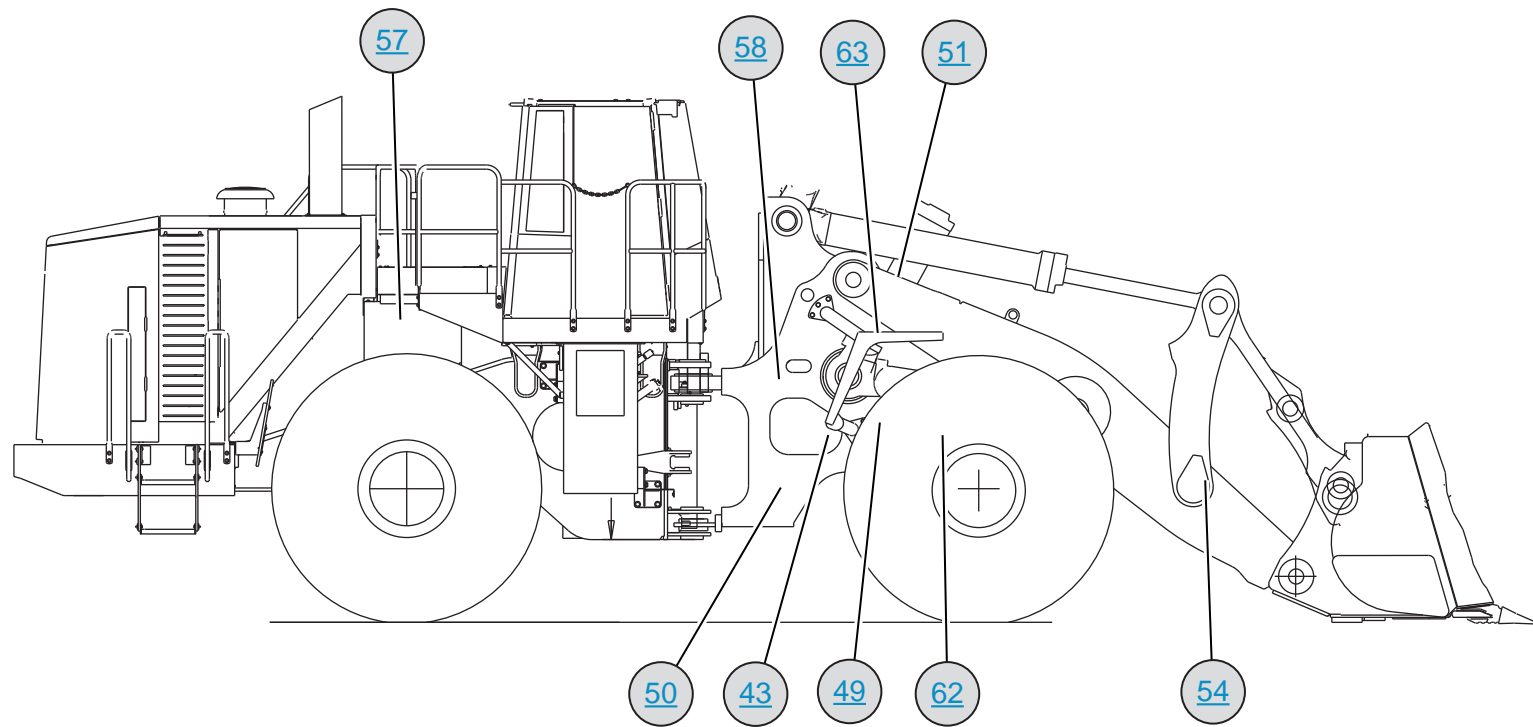
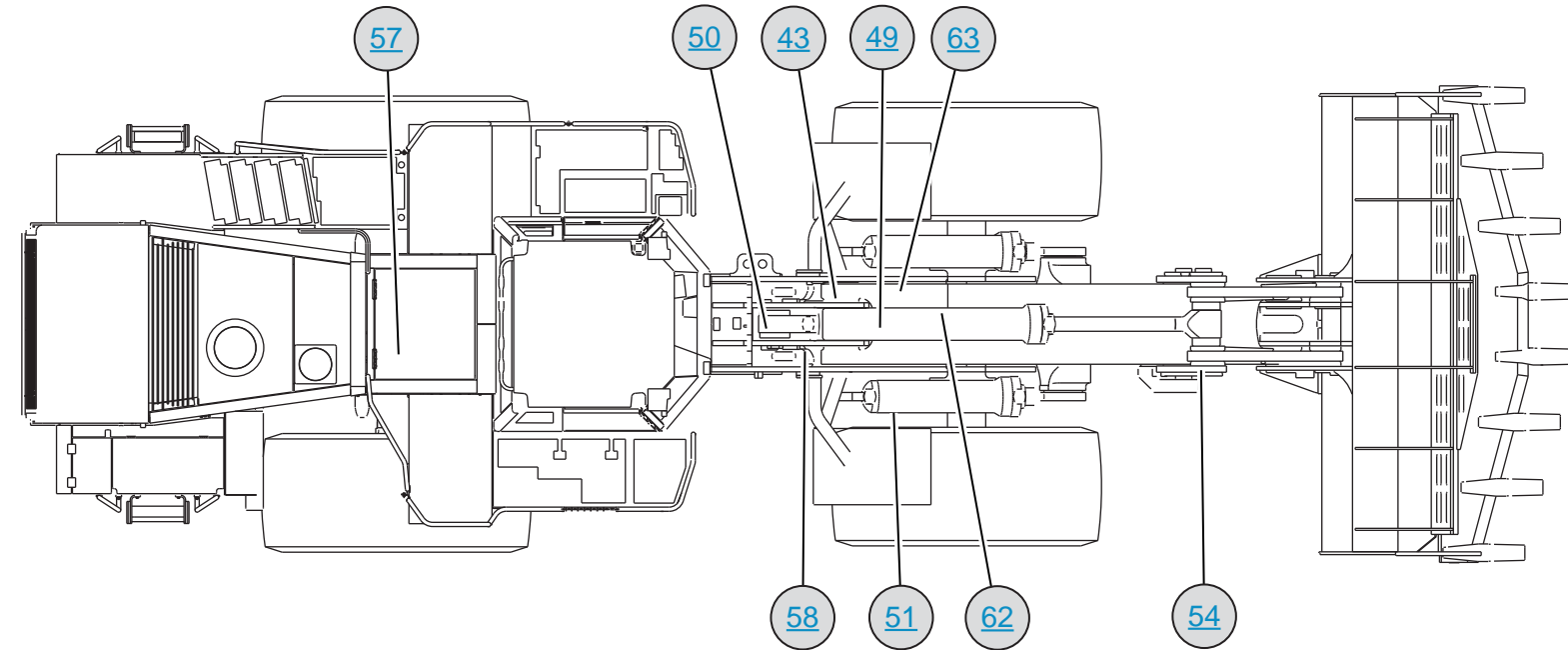
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THIS SCHEMATIC IS FOR THE 834H WHEEL TRACTOR, 836H LANDFILL COMPACTOR AND 988H WHEEL LOADER ELECTRICAL SYSTEM
VOLUME 2 of 2: CHASSIS WIRING
 MEDIA NUMBER: RENR3079-02
 SCHEMATIC PART NUMBER: 298-3543, CHANGE: 00, VERSION: -
 Components are shown installed on a fully operable machine with the key and engine off, transmission in the neutral and with parking brake set.
 Refer to the appropriate Service Manual for Troubleshooting, Specifications and Systems Operations.

MACHINE COMPONENT LOCATIONS - 836H (CAB WIRING)



MACHINE COMPONENT LOCATIONS - 834H AND 988H (CHASSIS WIRING)



MACHINE COMPONENT LOCATIONS - 836H (CHASSIS WIRING)

