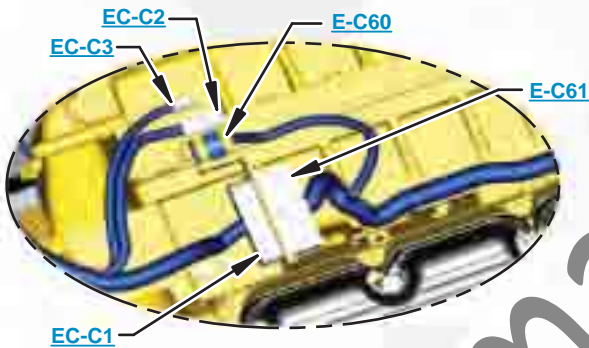


This document is best viewed at a screen resolution of 1024 X 768.

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

769D Truck and 771D Quarry Truck Electrical System

769D:
5TR1-UP

771D:
6JR1-UP

SchematicCat.Com

COMPONENT LOCATION

Page 1 of 2



Component	Schematic Location	Machine Location	Component	Schematic Location	Machine Location
Acc Outlet	B-10	1	Sensor - Brake Air Pressure	C-15	D
Acc Outlet	D-8	B	Sensor - Brake Oil Temp	A-10	26
Alarm - Action	C-4	C	Sensor - Coolant Temp	C-3	24
Alternator	A-5	2	Sensor - Engine Oil Pressure	B-3	26
Battery	A-7	3	Sensor - Engine Oil Temp	B-3	26
Breaker - A/C (15A)	D-6	B	Sensor - Fan Speed	A-5	24
Breaker - Alternator (105A)	C-6	B	Sensor - Fuel Temp	B-3	27
Breaker - Dome Lamp (15A)	C-6	B	Sensor - Primary Cam S/T	C-3	24
Breaker - Engine ECM (15A)	D-5	B	Sensor - Rail Pressure	C-3	26
Breaker - Head Lamp (15A)	D-5	B	Sensor - Shift Lever Position	D-11	C
Breaker - Key (10A)	D-6	B	Sensor - Strut Left Front	B-5	28
Breaker - Secondary Steering (10A)	D-6	B	Sensor - Strut Left Rear	B-14	29
Breaker - Turn Lamp (15A)	D-5	B	Sensor - Strut Right Front	A-5	30
Caterpillar Monitoring System	E-1	A	Sensor - Strut Right Rear	A-14	31
Cigar Lighter	C-3	A	Sensor - Torque Converter Temp	B-8	32
Control - Arc	D-13	D	Sensor - Throttle Position	C-6	C
Control - Oil Burn	C-15	40	Sensor - Turbo (RH) Inlet Pressure	A-5	30
Control - Payload Monitor	C-14	D	Sensor - Turbo Outlet Pressure	B-3	26
Control - Secondary Steering	F-15	D	Sensor - Wheel Speed	A-15	33
Control - Traction Aid	E-15	D	Sensor - Wheel Speed	B-15	34
Control - XMSN	D-13	D	Solenoid - A/C Clutch	A-5	2
Converter - 24V/12V	C-4	D	Solenoid - Downshift	A-13	35
Distributor - XMSN Speed	E-15	D	Solenoid - Engine Cyl Head (1, 3, 5, 7)	C-2	26
Dryer - Air	A-9	4	Solenoid - Engine Cyl Head (2, 4, 6, 8)	B-2	26
Engine ECM	A-3	8	Solenoid - Fan Clutch	B-6	24
Flasher	C-15	D	Solenoid - Four Way	A-14	36
Fuses	D-6	B	Solenoid - Lockup	A-13	18
Gauge Module	F-1	A	Solenoid - Proportional	A-14	36
Lamp - Action Monitor	F-2	A	Solenoid - Smoke Box	B-12	19
Lamp - Body Up	F-2	A	Solenoid - Start Aid	A-6	37
Lamp - Lever Position	D-11	A	Solenoid - Up Shift	A-14	35
Lamp - Payload Monitor (Green)	D-1	10	Speedo/Tach	F-1	A
Lamp - Payload Monitor (Green)	A-5	11	Starter	A-6	17
Lamp - Payload Monitor (Red)	A-5	11	Switch - A/C	D-2	A
Lamp - Payload Monitor (Red)	D-1	10	Switch - A/C Fan Pressure	B-6	2
Lamp - Retarder	F-2	A	Switch - A/C Refrigerant Pressure	B-7	2
Lamp - Secondary Steering	F-2	A	Switch - Auto Retard Pressure	D-12	38
Light Dimmer	F-14	D	Switch - Auto Retarder	D-3	A
Module - Stop/Tail Lamp	B-14	12	Switch - Blower	D-2	A
Motor - Blower	E-10	C	Switch - Body Raise	C-11	B
Motor - Prelube	A-7	15	Switch - Brake Master Cylinder Overstroke	A-10	39
Motor - Secondary Steering	A-7	18	Switch - Caterpillar Monitoring Sys Clear	E-5	B
Payload Monitor Operator Display	C-7	C	Switch - Caterpillar Monitoring Sys Service	E-5	B
Receptacle - Aux Start	A-6	13	Switch - Coolant Flow	C-3	26
Relay - Backup	C-15	D	Switch - Disconnect	A-7	40

COMPONENT LOCATION

Page 2 of 2



Component	Schematic Location	Machine Location	Component	Schematic Location	Machine Location
Relay - Headlamp	C-7	D	Switch - Door Courtesy Lamp	C-5	41
Relay - Main Power (Front)	D-6	D	Switch - Exhaust Diverter	E-5	20
Relay - Main Power (Mid)	C-6	D	Switch - Head Lamp Dimmer	D-5	C
Relay - Main Power (Rear)	C-6	D	Switch - Key Start	E-3	A
Relay - Prelube	A-6	16	Switch - Retarder Brake	E-15	C
Relay - Prelube	C-6	D	Switch - Running Lamp	E-3	A
Relay - Start	A-7	17	Switch - Secondary Brake	E-15	9
Relay - Start Aid Hold	C-15	D	Switch - Service Brake	E-15	D
Relay - Start Aid On	B-15	D	Switch - Start Aid	E-1	C
Relay - Steering Motor	A-7	17	Switch - Steering	A-8	4
Relay - Stoplamp	D-7	D	Switch - Stop Lamp	F-15	D
Resistor - Blower Speed	E-10	C	Switch - Supp Steer	F-3	A
Resistor - Engine Speed	A-6	19	Switch - Throttle Backup	E-2	C
Resistor - Exhaust Diverter	B-14	D7	Switch - Traction Aid Test	D-3	A
Resistor - Oil Burn	B-14	40	Switch - Transmission	A-13	35
Resistor - Start Aid	B-15	D	Switch - Turn Signal	D-5	C
Sender - Fuel Level	A-11	21	Switch - XMSN Filter	A-9	42
Sender - XMSN Speed	A-13	22	Thermostat	E-11	C
Sensor - Atmospheric Pressure	B-3	23	Valve - Arc Control	E-12	9
Sensor - Backup Cam S/T	C-3	24	Valve - Arc Supply	E-12	9
Sensor - Body Up	B-14	25	Valve - Rail Pressure Control	C-3	26

Machine location are repeated for components located close together

A = Operator Compartment - Front Dash

B = Operator Compartment - Rear Console

C = Operator Compartment

D = Operator Compartment - Behind Operator Compartment

CONNECTOR LOCATION



Connector Number	Schematic Location	Machine Location
CONN 1	D-15	D
CONN 2	D-15	D
CONN 3	A-14	32
CONN 4	B-14	32
CONN 5	E-14	D
CONN 6	A-13	35
CONN 7	B-13	1
CONN 8	F-13	D
CONN 9	B-13	1
CONN 10	C-12	1
CONN 11	D-12	D
CONN 12	D-12	D
CONN 13	D-12	D
CONN 14	C-11	1
CONN 15	E-12	B
CONN 16	D-10	D
CONN 17	C-10	1
CONN 18	E-10	C
CONN 19	C-9	1
CONN 20	D-9	C
CONN 21	C-8	1
CONN 22	B-5	1
CONN 23	B-5	43
CONN 24	E-5	44
CONN 25	A-4	26
CONN 26	E-4	C
CONN 27	E-4	C
CONN 28	E-2	C

¹ The connectors shown in this chart are for harness to harness connectors with a minimum of four contacts and other special connectors. Connectors that join a harness to a component are generally located at or near the component. See the Component Location Chart.

Component Identifiers (CID) List	
CID No.	Component
Engine Control MID 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
009	Cylinder 9 Injector Solenoid
010	Cylinder 10 Injector Solenoid
011	Cylinder 11 Injector Solenoid
012	Cylinder 12 Injector Solenoid
042	Rail Control Valve
091	Throttle Position Sensor
094	Filtered Fuel Pressure
100	Engine Oil Pressure Sensor
101	Crankcase Pressure
110	Coolant Temperature Sensor
161	Timing Calibration
164	Rail Pressure Reading
168	Electrical System Voltage
174	Fuel Temperature
175	Engine Oil Temperature
190	Engine RPM Sensor
248	CAT Data Link
253	Personality Module Mismatch
254	Internal ECM Failure
261	Timing Calibration
262	Analog Sensor Power Supply
263	Digital Sensor Power Supply
264	Shutdown/Decelerator Inputs
266	Crank w/o Injector Inputs
267	Shutdown Inputs
268	Programmed Parameter Fault
273	Turbo Outlet Pressure Calibration
274	Atmospheric Pressure Calibration
275	Turbocharger Pressure (Right)
276	Turbocharger Pressure (Left)
277	Timing Calibration
279	Water Temperature Aftercooler
281	Engine Lamp
284	EMS Engine On
285	EMS Coolant Lamp
286	EMS Oil Lamp
289	Unfiltered Fuel Pressure
291	Engine Fan Valve
298	Invalid Service Brake Switch
336	Engine Control Switch
337	E-Stop Switch
338	Prelubrication Relay
342	Loss Of Sec Engine RPM Signal
363	Ride Control
444	Starting Motor
542	Unfiltered Oil Pressure
544	Engine Fan Speed
545	Ether Inject Control Relay
548	Throttle Lock Lamp
601	Brake Air Pressure Sensor
680	Ride Control Switch
827	Turbocharger Exhaust Temp (Left)
828	Turbocharger Exhaust Temp (Right)

Component Identifiers (CID) List	
CID No.	Component
Transmission Control MID 27	
168	Electrical System Voltage
190	Engine Speed Sensor
248	CAT Data Link
269	Sensor Supply Voltage
571	Forward Elevator Solenoid
572	Reverse Elevator Solenoid
575	Elevator Level Sensor
627	Secondary Brake Pressure Switch
650	Harness Code
672	Torque Converter Output
700	Transmission Gear Switch
701	Transmission Output Speed Sensor
702	Shift Lever Switch
704	Service Brake Pressure Switch
Automatic Retarder Control MID 83	
091	Throttle Position Sensor
168	Electrical System Voltage
190	Engine RPM Sensor
248	CAT Data Link
627	Parking Brake Switch
650	Harness Code
700	Actual Gear Switch
702	Shift Lever Switch
710	ARC Supply Solenoid
711	ARC Control Solenoid
712	Retarder Lamp
713	ARC On/Off Switch
714	Auto Retarder Pressure Switch
715	Retarder Pressure Switch

Failure Mode Identifiers (FMI)	
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.

Monitoring System Service Modes	
Mode Of Operation	Mode Number
Normal	0
Harness Code	1
Numeric Readout	2
Service	3
Tattletale (Log)	4
Units	5
Total Load Count Display	6
Calibration (EPTC II)	7

Off Machine Switch Specification				
Part No.	Function	Actuate	Deactuate	Contact Position
2M-9346	Stop Lamp Pressure	45.0 kPa Max (6.5 psi MAX)	5 kPa MIN (0.5 psi MIN)	Normally Open
3E-2033	Secondary Brake Air Pressure (Trans)	640 kPa (92.0 psi)	530 ± 40 kPa (77.0 ± 6.0 psi)	Normally Open
3E-2034	Service Brake Air Pressure (Tractn) Service Brake Air Pressure (Trans)	80 kPa (12.0 psi)	55 ± 20 kPa (8.0 ± 3.0 psi)	Normally Closed
3E-6429	Steering	4 grams (.14oz)	1.5 grams (.05oz)	Normally Open
7V-5647	Brake Master Cylinder Overstroke	12.23 ± 5.56 N (2.75 ± 1.25 lb)	—	Normally Closed
9X-7781	Power Train Filter Pressure (EMS)	210 ± 70 kPa (30 ± 10psi)	—	Normally Open
103-4977	Retarder Brake Pressure	60.0 kPa (8.7 psi)	—	Normally Open
111-9560	A/C Fan Pressure	1585 kPa ± 103kPa (230 psi ± 14.9 psi)	1275 kPa ± 103kPa (185 psi ± 14.9 psi)	Normally Closed
111-9563	Auto Retarder Pressure	80.0 kPa MAX (11.6 psi MAX)	55.0 ± 20.0 kPa (8.0 ± 2.9 psi)	Normally Closed
114-5333	Refrigerant Pressure (AC)	275 to 1750 kPa (40 to 255 psi)	—	Normally Open

Resistor, Sender and Solenoid Specifications		
Part No.	Component Description	Resistance (Ohms) ¹
125-9740	Resistor - Blower Motor	Overall 2.6 ± 0.12
124-6704	Resistor - Exhaust Diverter, Oil Burn, Start Aid	Overall 20 ± .2
3E-1 906	Solenoid - A/C Clutch	17.6 ± 0.6
7X-1 120	Solenoid - Downshift, Upshift, Lockup	33.7
131-3098	Solenoid - Engine Cyl Head (1-8)	2.1 ± 0.2
105-3025	Solenoid - Fan Clutch	4.3
9G-9988	Solenoid - Four Way	24.9
3T-0062	Solenoid - Proportional	16.0
101-3430	Solenoid - Smoke Box	31.1 ± 2.4
3E-6333	Solenoid - Start Aid	6.0

¹ At room temperature unless otherwise noted.

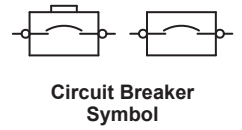
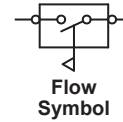
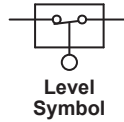
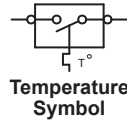
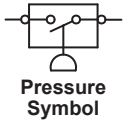
Related Electrical Service Manuals	
Title	Form Number
Arc Control	SENR5683
Alternator 100-5047	SENR2082
Caterpillar Monitoring System	SENR671 7
Engine Control	SENR1037
Payload Monitor	SENR4733
Starting And Charging Systems	SENR2947
Starting Motor 6V-0890	SENR3860
Traction Aid Control	SENR2986
Transmission Control	SENR9122

HARNESS and WIRE

Electrical Schematic Symbols



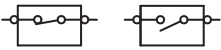
Symbols



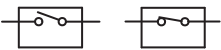
Symbols and Definitions



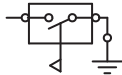
Fuse: A component in an electrical circuit that will open the circuit if too much current flows through it.



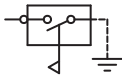
Switch (Normally Open): A switch that will close at a specified point (temp, press, etc.). The circle indicates that the component has screw terminals and a wire can be disconnected from it.



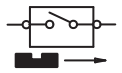
Switch (Normally Closed): A switch that will open at a specified point (temp, press, etc.). No circle indicates that the wire cannot be disconnected from the component.



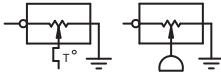
Ground (Wired): This indicates that the component is connected to a grounded wire. The grounded wire is fastened to the machine.



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



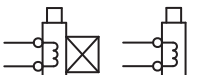
Reed Switch: A switch whose contacts are controlled by a magnet. A magnet closes the contacts of a normally open reed switch; it opens the contacts of a normally closed reed switch.



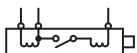
Sender: A component that is used with a temperature or pressure gauge. The sender measures the temperature or pressure. Its resistance changes to give an indication to the gauge of the temperature or pressure.



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.



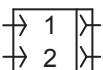
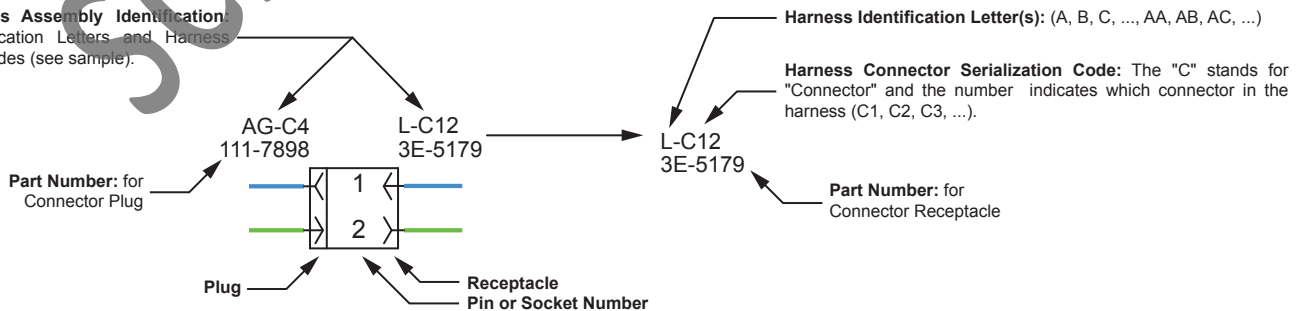
Solenoid: A solenoid is an electrical component that is activated by electricity. It has a coil that makes an electromagnet when current flows through it. The electromagnet can open or close a valve or move a piece of metal that can do work.



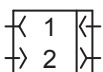
Magnetic Latch Solenoid: A magnetic latch solenoid is an electrical component that is activated by electricity and held latched by a permanent magnet. It has two coils (latch and unlatch) that make electromagnet when current flows through them. It also has an internal switch that places the latch coil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

Harness and Wire Symbols

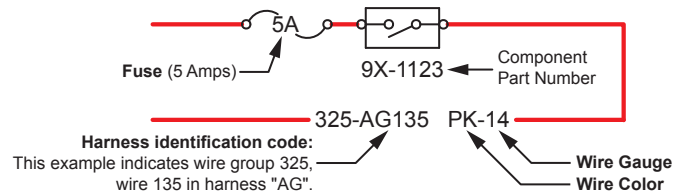
Wire, Cable, or Harness Assembly Identification: Includes Harness Identification Letters and Harness Connector Serialization Codes (see sample).

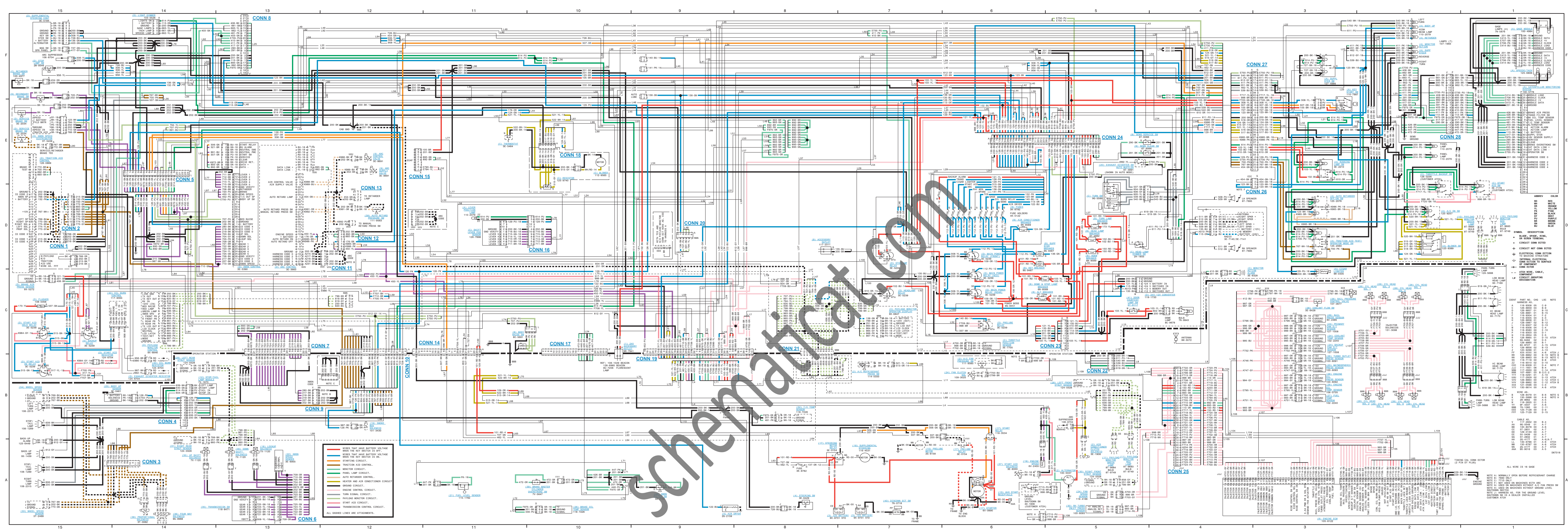


Deutsch connector: Typical representation of a Deutsch connector. The plug contains all sockets and the receptacle contains all pins.



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



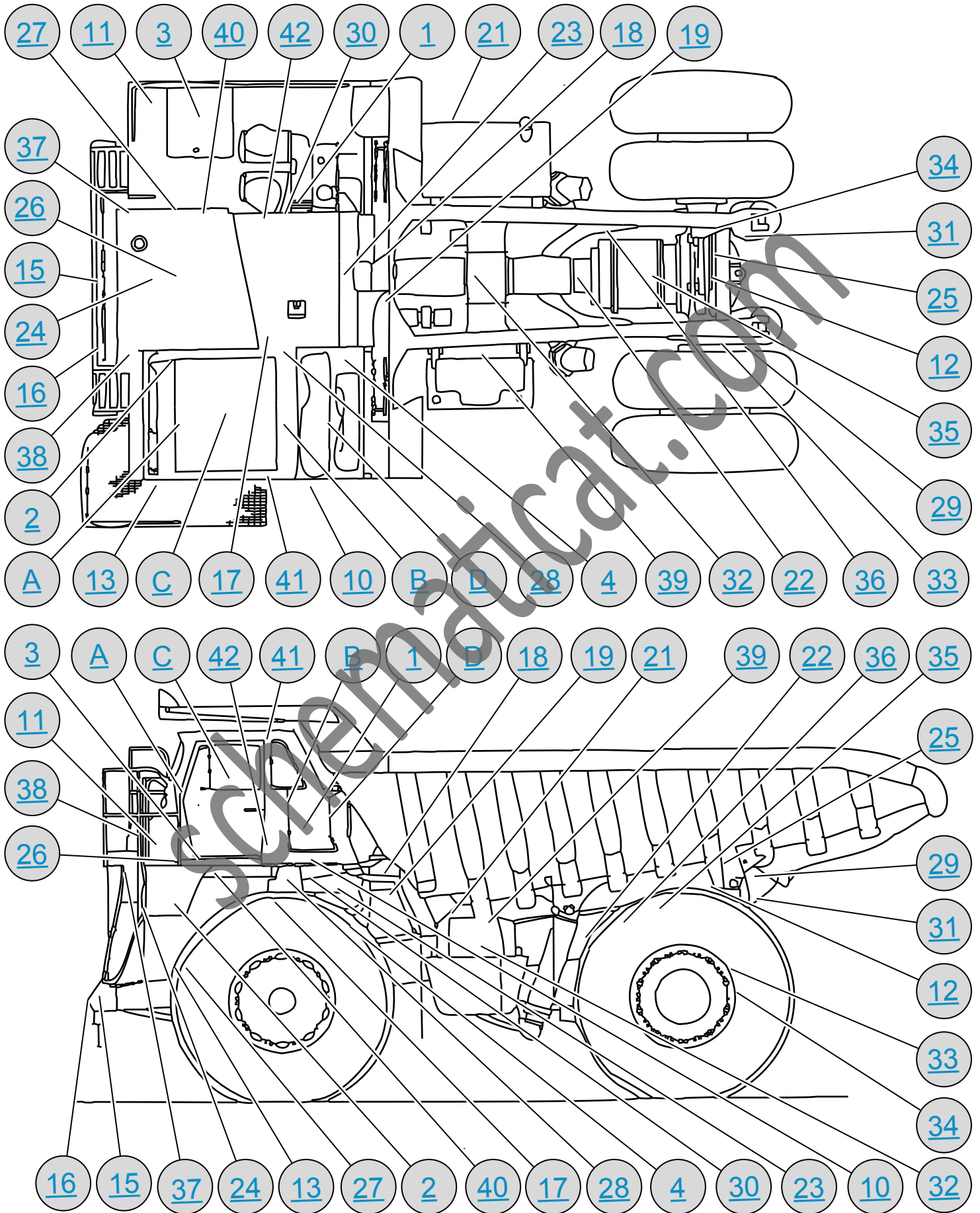


THIS SCHEMATIC IS FOR THE 769D TRUCK AND 771D QUARRY TRUCK ELECTRICAL SYSTEM
 MEDIA NUMBER:
 SCHEMATIC PART NUMBER: 113-0755, CHANGE: 00, VERSION: -
 Components are shown installed on a fully operable machine with the key and engine off, transmission shifter in neutral and with parking brake set.
 Refer to the appropriate Service Manual for Troubleshooting, Specifications and Systems Operations.

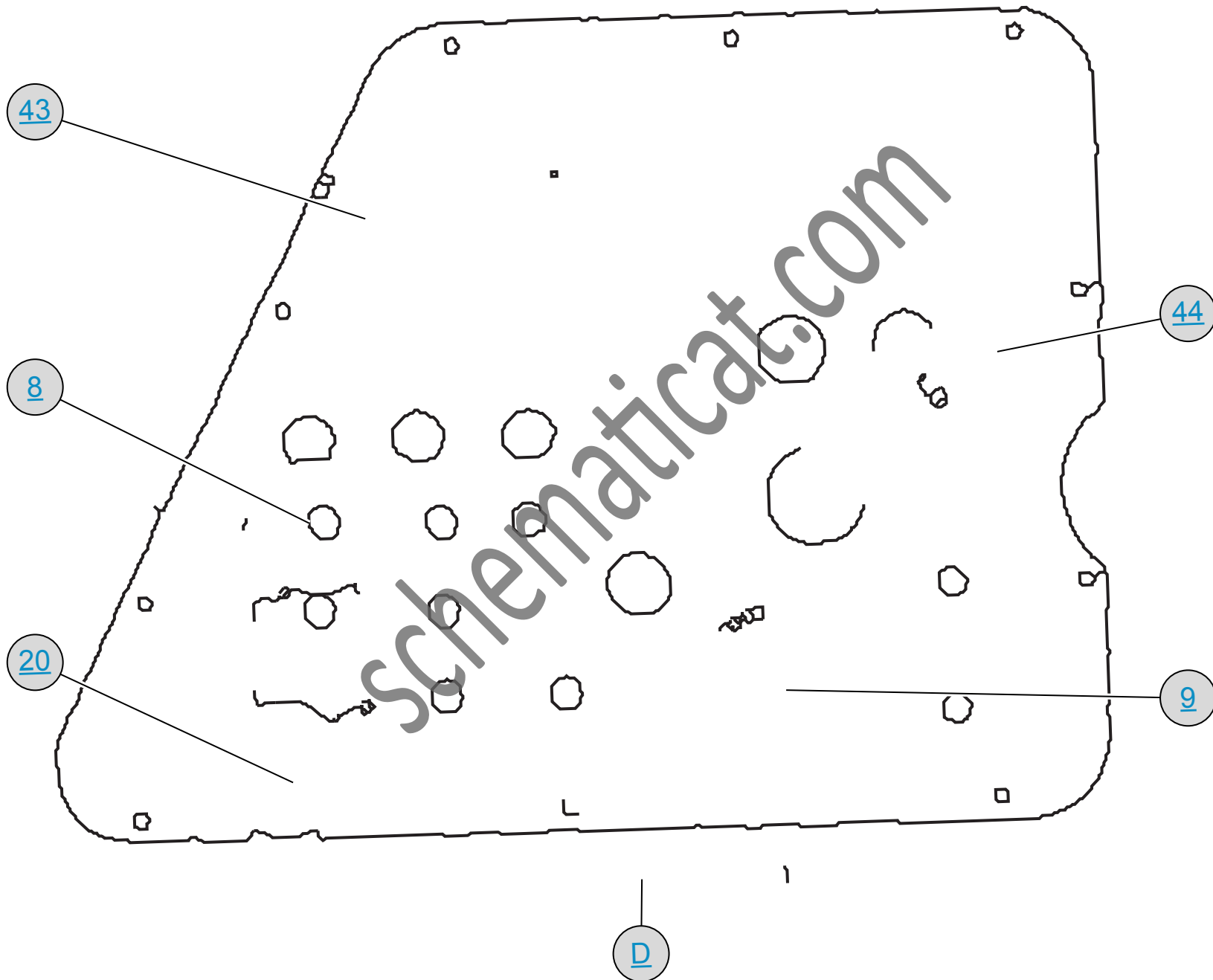
- Wires that have battery voltage when the key switch is OFF.
- Wires that have battery voltage when the key switch is ON.
- Starting circuit.
- Starting aid circuit.
- Monitor circuit.
- Auto retarder control.
- Heater and air conditioner circuit.
- Ground circuit.
- Engine control circuit.
- Turn signal circuit.
- Payload monitor circuit.
- Start aid circuit.
- Transmission control circuit.
- All dashed lines are attachments.

MACHINE COLOR LEGEND		ENGINE COLOR LEGEND	
Red	(+) BATTERY SUPPLY WIRE	Red	(+) BATTERY SUPPLY WIRE
Blue	WIRE GROUP COLOR DESCRIPTIONS	Blue	INPUT SIGNAL WIRES TO ECM
Orange	WIRES THAT HAVE SYSTEM VOLTAGE WHEN THE KEY SWITCH IS OFF.	Green	OUTPUT SIGNAL WIRES FROM ECM
Yellow	WIRES THAT HAVE SYSTEM VOLTAGE WHEN THE KEY SWITCH IS ON.	Pink	SENSOR SUPPLY VOLTAGE
Black	VOLTAGE CONVERTER OUTPUT CIRCUIT.	Black	SIGNAL PLUS
White	STARTING CIRCUIT.	White	SIGNAL MINUS
Grey	STARTING AID CIRCUIT.	White	(-) BATTERY / SENSOR RETURN
Light Blue	MONITOR CIRCUIT (VIMS) / (CMS) / (EMS) / (OTHER)		
Light Green	ENGINE CONTROL CIRCUIT (MASTER)		
Light Orange	FRONT ENGINE CONTROL CIRCUIT.		
Light Yellow	REAR ENGINE CONTROL CIRCUIT.		
Light Purple	PAYLOAD CONTROL CIRCUIT.		
Light Blue-Gray	TRANSMISSION / ENGINE PUMP CONTROL CIRCUIT.		
Light Green-Gray	CHASSIS / AWD CONTROL CIRCUIT.		
Light Orange-Gray	TOOL / VALVE / IMPLEMENT CONTROL CIRCUIT.		
Light Yellow-Gray	INTEGRATED BRAKING CONTROL CIRCUIT.		
Light Purple-Gray	MACHINE SECURITY CONTROL CIRCUIT.		
Light Blue-Gray	REMOTE ACCESS CONTROL CIRCUIT.		
Light Green-Gray	MISC CONTROL CIRCUIT (1).		
Light Orange-Gray	MISC CONTROL CIRCUIT (2).		
Light Yellow-Gray	HEATER AND AIR CONDITIONER CIRCUIT.		
Light Purple-Gray	TURN SIGNAL/WIPER/WASHER CIRCUIT.		

MACHINE HARNESS CONNECTOR AND COMPONENT LOCATIONS



RIGHT SIDE WALL OF REAR COMPARTMENT



REAR COMPARTMENT

