

Part No.	Component Description	Resistance (Ohms) <sup>1</sup>
3E-1906	Solenoid - A/C Clutch	17.6 ± 0.6
8C-3663	Solenoid - Engine Start/Stop	Latch Coil : 1.55 ± 1.5 Unlatch Coil: 10.3 ± 1.03
8U-6424	Solenoid - Blade Front Blade Rear Hammer Heavy Lift Left Front Stabilizer Lockout Left Rear Stabilizer Lockout Parking Brake Right Front Stabilizer Lockout Right Rear Stabilizer Lockout Transmission Speed	19
172-7029	Solenoid - OSC Axle Lock Creeper Speed Swing Brake Travel Activation Implement Activation	33.8/17 Watt
112-7178	Sender - Fuel Level	Full = 0.4 Empty = 70.6
116-4710	Sender - Hydraulic Oil High Temperature	38.5 @ 100 °C (212 °F) 51.2 @ 90 °C (194 °F) 134 @ 80 °C (140 °F)
122-2373	Resistor - Heater Fan	Position 1 = 6 Position 2 = 1.5
124-0329	Resistor - Backup Main Pump PRV Backup Swing Pump PRV	Overall 6.0; Tap 1.5 or 4.5
143-8251	Resistor - Backup Main Pump PRV Backup Swing Pump PRV	59 ± 1.18/25 Watt

<sup>1</sup> At room temperature unless otherwise noted.

Related Electrical Service Manuals	
Title	Form Number
Alternator 9W-3043	SENR3685
Starting Motor 8C-4774	
Consist: 8C-4773	SENR3559
Consist: 3E-1944	SENR3561
Consist: 106-8558	SENR3559
Electronic Control Systems	SENR8265

Component Location		
Component	Schematic Location	Machine Location
AEC - Aux. Hyd.	F - 8	D
Alternator	C - 13	2
Alternator Fuse	C - 15	5
Battery 12v (2)	H - 13	3
Cigar Lighter	F - 2	A
Converter 24v - 12v	D - 3	A
Diode - A/C	E - 13	D
Diode - AEC - Aux. Hyd.	F - 8	D
Diode - Brake	D - 6	D
Diode - Harness AS	B - 8	D
Diode - Stop Lamp	E - 8	D
Diode - Temp	E - 6	D
Engine Control	C - 12, B - 12	A
Engine Pump Control	B - 11, C - 11	A
Engine Speed Dial	C - 2	C
Flasher	F - 7	C
Fuse Block (A Black)	F - 10	D
Fuse Block (B Yellow)	F - 9	D
Fuse Block (C Green)	E - 10	D
Fuse Block (D Red)	F - 9	D
Governor Actuator	C - 13	6
Hour Meter	E - 5	D
Main Fuse	G - 8	D
Monitor Panel	C - 2	C
Motor - Air Conditioner Fan	E - 14	8
Motor - Heater Fan	B - 9	10
Motor - Lower Washer	G - 13	11
Motor - Lower Wiper	E - 1	12
Motor - Refueling Pump	H - 13	9
Motor - Starter	C - 14	5
Motor - Secondary Steering	H - 12	4
Motor - Upper Washer	G - 13	9
Motor - Upper Wiper	E - 2	A
Radio	F - 2	A
Regulator - A/C Temperature	B - 10	10
Relay - A/C Clutch	D - 13	D
Relay - A/C Fan	E - 13	D
Relay - Air Horn	E - 7	D
Relay - Brake	F - 6	D
Relay - Brake/Travel Cutoff	D - 5	D
Relay - Interval Wiper	G - 6	D
Relay - Main Power	F - 7	D
Relay - Pilot Press Enable	F - 7	D
Relay - Power Mode	F - 6	D
Relay - Start	C - 15	D
Relay - Start/Stop	E - 7	D
Relay - Secondary Steering	G - 13	4
Relay - Secondary Steering	H - 13	D
Relay - Stop Lamp Cutoff	F - 7	D
Relay - Swing Brake Timer	G - 5	D
Relay - Temperature	E - 6	D
Relay - Transmission Speed	F - 6	D
Relay - Travel Alarm	F - 5	D
Relay - Travel Cutoff	F - 5	D
Resistor - Backup Main Pump PRV	E - 10	D
Resistor - Backup Swing Pump PRV	E - 10	D
Resistor - Heater Fan	B - 8	10
Sender - Coolant Temperature	D - 12	2
Sender - Fuel Level	F - 14	13
Sender - Hydraulic Oil High Temperature	E - 14	23
Sender - Engine Speed	D - 15	14
Solenoid - Aux. Hyd. (low)	G - 15	16
Solenoid - Aux. Hyd. (low)	G - 15	16
Solenoid - A/C Clutch	D - 14	15
Solenoid - Blade Front	G - 1	27
Solenoid - Blade Rear	H - 10	17
Solenoid - Creeper Speed	F - 15	16
Solenoid - Engine Start/Stop	D - 13	6
Solenoid - Hammer	E - 13	16
Solenoid - Heavy Lift	F - 15	16
Solenoid - Implement Activation	G - 15	16
Solenoid - Left Front Stabilizer Lockout	G - 1	18
Solenoid - Left Rear Stabilizer Lockout	G - 10	27
Solenoid - Main Pump PRV	G - 14	16

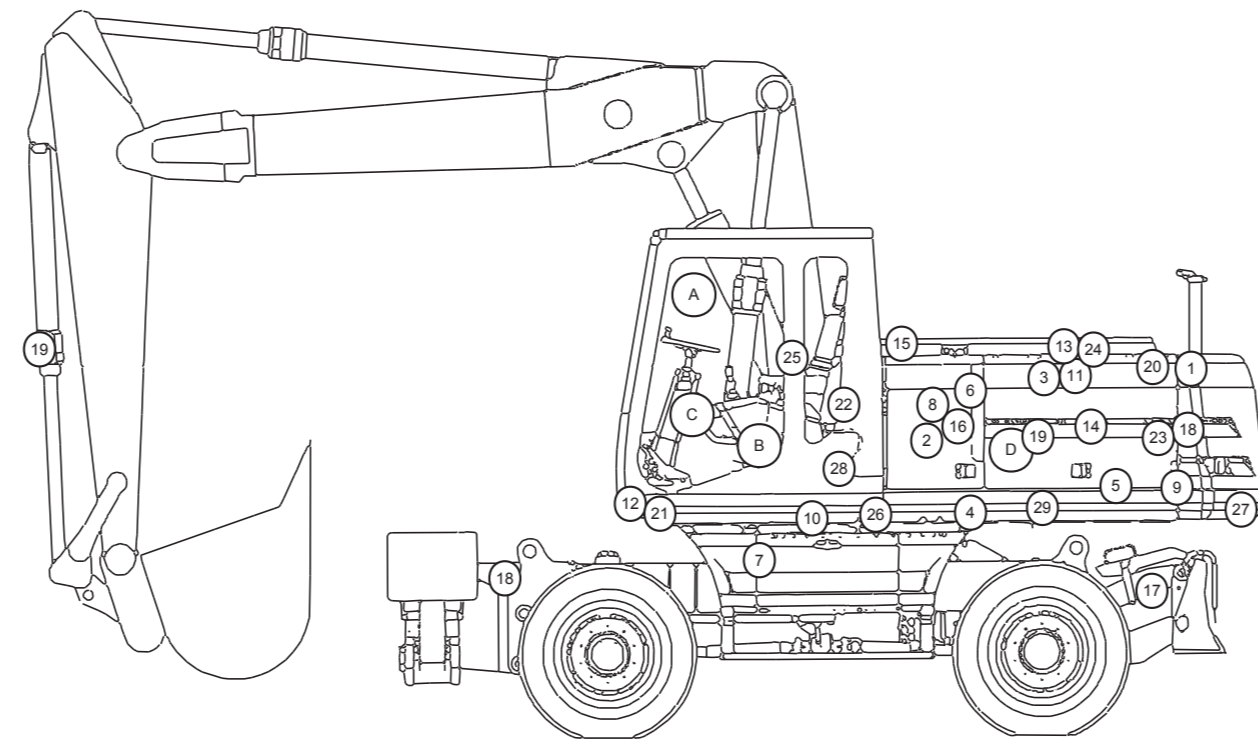
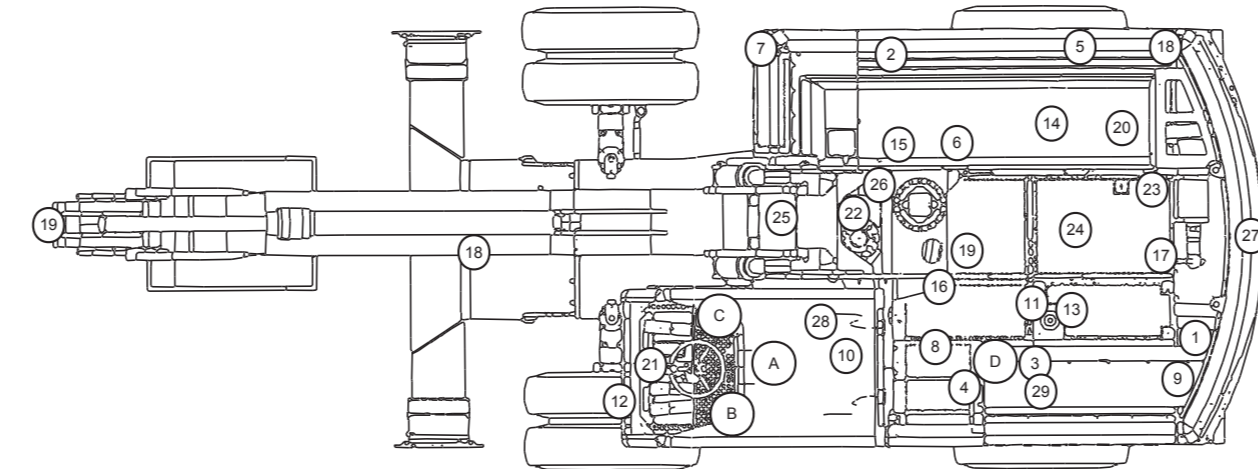
Machine locations are repeated for components located close together.

A = Located Inside Of Cab  
B = Located Inside Of RH Console  
C = Located Inside Of LH Console  
D = Located Around Relay Panel

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

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.

Off Machine Switch Specification				
Part No.	Function	Actuate	Deactuate	Contact Position
3E-6429	Primary Flow	4.0 grams MAX (0.14 oz)	1.5 grams MIN (0.05 oz)	Normally Open
5W-9972	Low Brake Pressure	10132 kPa (1470 psi)	--	Normally Open
114-5333	A/C Pressure	Low 275 kPa (39.9 psi) MAX High 2800±140 kPa (406±20.3 psi)	Low 170±55 kPa (24.6±7.9 psi) High 1750±200 kPa (254±29 psi)	Normally Open
116-4710	Hydraulic Oil High Temperature	94 °C 201 °F	--	Normally Open
119-3399	Coolant Temperature	100 °C 212 °F	--	Normally Open
119-3400	Hydraulic Oil Low Temperature	11 °C 52 °F	17 °C 63 °F	Normally Open
171-7570	Low Transmission Clutch Pressure	2600 kPa (377 psi)	--	Normally Open
163-2084	AEC Swing Pressure Boom-Cyl Pressure Stick-Cyl Pressure	507 kPa (74 psi)	--	Normally Open



Machine Harness Connector and Component Locations



REN4034  
June 2000

# Schematic

## M318 and M320 Excavators Electrical System

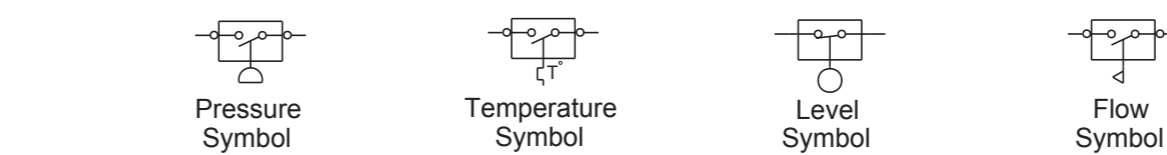
M318:  
8AL2265-UP  
6ES243-UP

M320:  
6WL469-UP

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### 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.

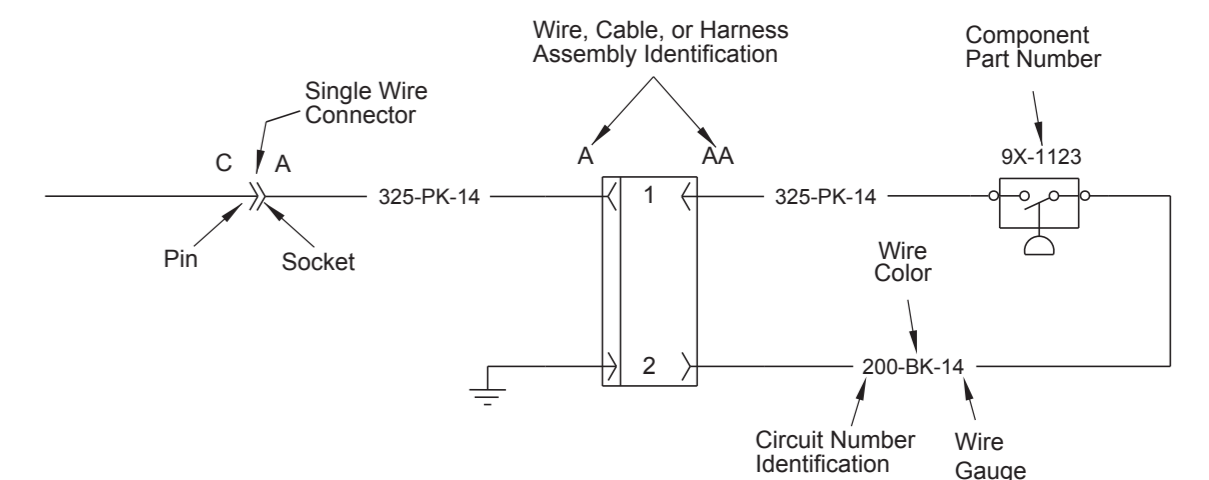
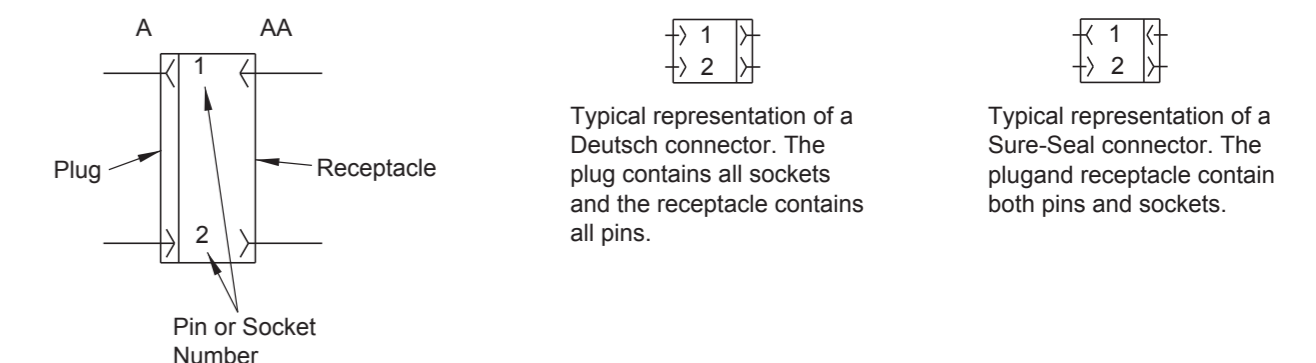
The circle indicates that the component has screw terminals and a wire can be disconnected from it.

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.

### 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.

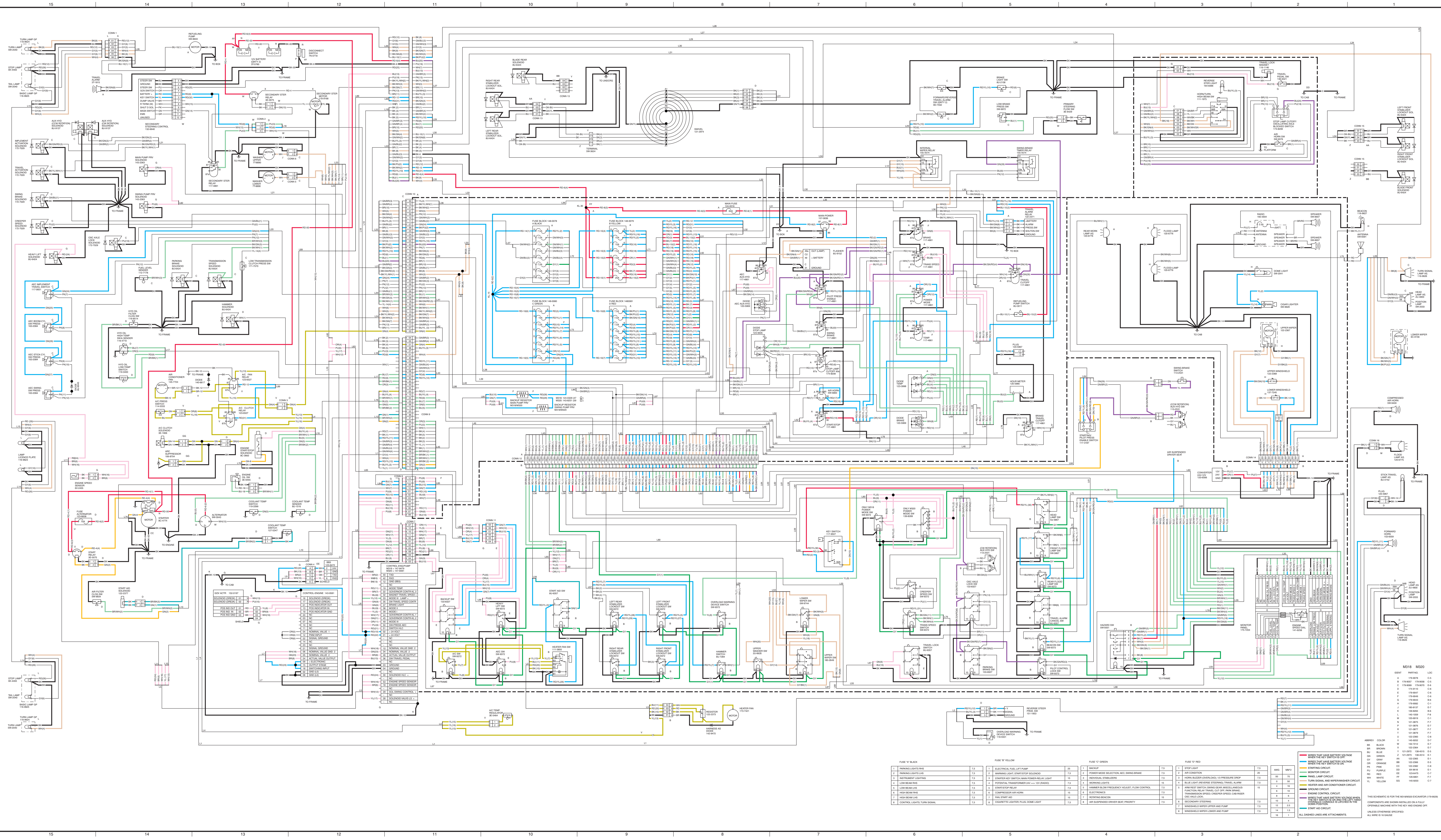
**REED SWITCH** - A switch whose contacts are controlled by a magnet. A magnet closes the contacts of a normally open reed switch; it opens the contacts of a normally closed reed switch.

**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.



FUSE 'K' BLACK	FUSE 'Y' YELLOW	FUSE 'G' GREEN	FUSE 'R' RED
1. PARKING LIGHTS W/S	1. ELECTRICAL FUEL PUMP	1. BACKUP	1. STOP LIGHT
2. PARKING LIGHTS L/S	2. WARNING LIGHT STARTSTOP SOLENOID	2. POWER MODE SELECTION ACC. BRG. BRAKE	2. AIR CONDITION
3. INSTRUMENT LIGHTING	3. STARTER RELAY	3. HORN BLOWER OVERLOAD, 15 AMP	3. HORN BLOWER OVERLOAD, 15 AMP
4. LOW BEAM L/S	4. POTENTIAL TRANSFORMER SW. TO ENG. STOP	4. WORKING LIGHTS	4. BLUE LIGHT (REVERSE STEERING TRAVEL ALARM)
5. HIGH BEAM L/S	5. STARTSTOP RELAY	5. HORN BLOWER LOW FREQUENCY ADJUST. FLOW CONTROL	5. HORN BLOWER LOW FREQUENCY ADJUST. FLOW CONTROL
6. HIGH BEAM R/S	6. COMPRESSOR MOTOR	6. ELECTRONICS	6. AIR REST SWITCH SWING GEAR WHEEL LOCKS
7. LOW BEAM R/S	7. FAN START SW	7. FAN START SW	7. AIR REST SWITCH SWING GEAR WHEEL LOCKS
8. CONTROL LIGHTS TURN SIGNAL	8. CIGARETTE LIGHTER FUSE, 10A	8. AIR SUSPENDED DRIVER SEAT, PRIORITY	8. SECONDARY STEERING
			9. TRANSMISSION SPEED CREEPER SPEED, CAB RISER
			10. TRANSMISSION SPEED CREEPER SPEED, CAB RISER
			11. TRANSMISSION SPEED CREEPER SPEED, CAB RISER
			12. TRANSMISSION SPEED CREEPER SPEED, CAB RISER
			13. TRANSMISSION SPEED CREEPER SPEED, CAB RISER
			14. TRANSMISSION SPEED CREEPER SPEED, CAB RISER
			15. TRANSMISSION SPEED CREEPER SPEED, CAB RISER
			16. TRANSMISSION SPEED CREEPER SPEED, CAB RISER
			17. TRANSMISSION SPEED CREEPER SPEED, CAB RISER
			18. TRANSMISSION SPEED CREEPER SPEED, CAB RISER
			19. TRANSMISSION SPEED CREEPER SPEED, CAB RISER
			20. TRANSMISSION SPEED CREEPER SPEED, CAB RISER

ABBREVIATION	COLOR	DESCRIPTION
BK	BLACK	BLACK
BL	BLUE	BLUE
BR	BROWN	BROWN
GR	GREEN	GREEN
OR	ORANGE	ORANGE
PK	PINK	PINK
PU	PURPLE	PURPLE
RD	RED	RED
WH	WHITE	WHITE
YL	YELLOW	YELLOW

THIS SCHEMATIC IS FOR THE M318/M320 EXCAVATOR (1976-80). COMPONENTS ARE SHOWN INSTALLED ON A FULLY OPERABLE MACHINE WITH THE CY AND ENGINE OFF. UNLESS OTHERWISE SPECIFIED, ALL WIRE IS 14 GAUGE.