

Component Identifiers (CID) List	
CID No.	Component
Caterpillar Monitoring System MID 30	
096	Fuel Level Sensor
110	Engine Coolant Temperature Sensor
177	Torque Converter Oil Temperature Sensor
248	Data Link
263	8 Volt Sensor Power Supply
271	Action Alarm
324	Action Lamp
600	Hydraulic Oil Temperature Sensor
601	Brake Air Pressure
819	Display Data Link
821	8 Volt Display Power Supply
830	Brake Oil Temperature
Power Train Electronic Control System MID 113	
070	Parking Brake Switch
075	Steering System Oil Temperature Sensor
168	Electrical System
177	Transmission Oil Temperature Sensor
190	Engine Speed Sensor
248	Data Link
254	Electronic Control Module
269	Sensor Power Supply
298	Service Brake Switch
299	Direction Selector Position Sensor
368	Autoshift Switch - Power Train
488	Service Brake Pedal Position Sensor
573	Inching Pedal Position Sensor
618	Parking Brake Switch
621	Downshift Switch
622	Upshift Switch
623	Reverse Switch
650	Harness Code
671	Transmission Output Speed 1 Sensor
672	Torque Converter Output Speed Sensor
673	Transmission Output Speed 2 Sensor
674	Transmission Intermediate Speed 1 Sensor
675	Transmission Intermediate Speed 2 Sensor
676	Left Steering Lever Position Sensor
677	Right Steering Lever Position Sensor
681	Parking Brake Solenoid
689	Left Steering Brake Solenoid
690	Right Steering Brake Solenoid
691	Reverse Clutch Solenoid Valve 1
692	Forward Clutch Solenoid Valve 2
693	Speed 3 Clutch Solenoid Valve 3
694	Speed 2 Clutch Solenoid Valve 4
695	Speed 1 Clutch Solenoid Valve 5
697	Priority Valve Solenoid
698	Left Steering Clutch Solenoid Valve
699	Right Steering Clutch Solenoid Valve
718	Transmission Unintelligible Failure Mode
722	Secondary Brake Solenoid Valve

Wire Description		Wire Description	
Wire Number	Wire Color	Wire Number	Wire Color
Power Circuits		Accessory Circuits (Continued)	
101	RD	512	GN
102	BU	513	OR
105	BR	515	GY
108	BU	516	GN
109	OR	517	BU
112	PU	521	YL
113	OR	522	WH
114	GN	523	BR
116	OR	524	BU
124	GN	525	GY
129	BU	526	YL
140	BU	527	GN
158	BR	528	PK
176	OR	529	WH
197	GN	530	OR
198	PK	592	BU
199	OR	593	GN
Ground Circuits		Lighting Circuits	
200	BK	600	BR
201	BK	608	GN
202	BK	609	YL
203	BK	610	OR
207	BK	663	GY
270	BK	Control Circuits	
271	BK	709	OR
272	BK	751	GN
273	BK	752	YL
274	BK	754	BU
275	BK	755	OR
276	BK	851	WH
277	BK	892	BR
278	BK	893	GN
279	BK	900	PU
280	BK	973	BR
290	BK	975	WH
291	BK	977	YL
301	BU	C413	YL
302	OR	E417	GN
304	WH	E708	PK
306	GN	E735	PU
307	OR	E900	WH
308	YL	E901	GN
310	PU	E902	PU
311	WH	E903	YL
321	BR	E904	BR
322	GY	E905	BU
324	BU	E906	OR
327	WH	E907	GY
403	GN	E908	BR
405	GY	E909	WH
410	WH	F780	PK
411	PK	F781	BR
419	YL	F782	OR
426	BR	F783	GN
441	OR	F784	YL
442	GY	F785	WH
443	YL	F786	GY
447	PK	F788	PU
450	YL	F789	YL
500	BR	F790	BR
501	GN	F791	BU
502	OR	F792	WH
503	BR	F842	BU
504	YL	F843	YL
505	BU	F846	PU
506	PU	F847	YL
507	WH	F848	OR
508	PU	F849	WH
509	WH	F850	PK
511	BR	G730	PK
		G731	GY
		G848	GN
		G939	PK
		K977	PK
		K978	BU
		K979	BU

Monitoring System Mode	
Mode Of Operation	Mode Number
Normal	0
Harness Code	1
Numeric Readout	2
Service	3
Tattle-tale (Log)	4
Steering Brake Calibration	5
Transmission Calibration	6
Component Data Display	7
Charging System Display	8

Connector Location ¹		
Connector Number	Schematic Location	Machine Location
CONN 1	C-12	29
CONN 2	C-12	30
CONN 3	D-12	31
CONN 4	F-12	28
CONN 5	B-10	30
CONN 6	F-10	D
CONN 7	A-9	21
CONN 8	B-9	21
CONN 9	F-9	26
CONN 10	D-13	30
CONN 11	A-8	32
CONN 12	B-8	37
CONN 13	B-7	37
CONN 14	B-5	33
CONN 15	B-5	22
CONN 16	B-5	A
CONN 17	C-5	A
CONN 18	D-3	A
CONN 19	D-3	34
CONN 20	D-2	35
CONN 21	E-2	34
CONN 22	F-2	34
CONN 23	F-1	35

¹The 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.



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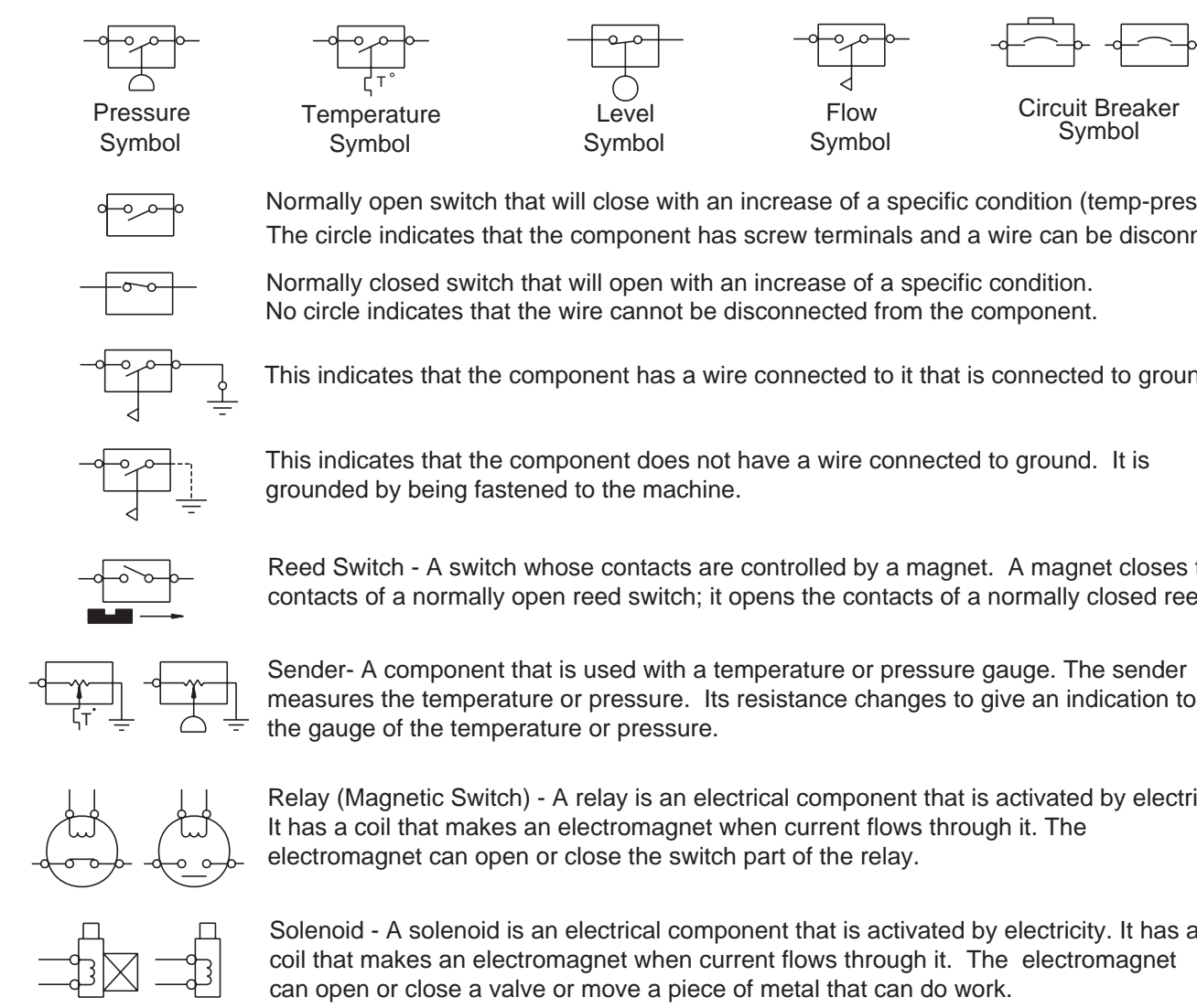
Schematic

D6R Tractor (Finger Tip Control) Electrical System

2HM1-UP
2YN1-UP
4HN1-UP
4MN1-UP
6JN1-UP
8LN1-UP
8XN1-UP

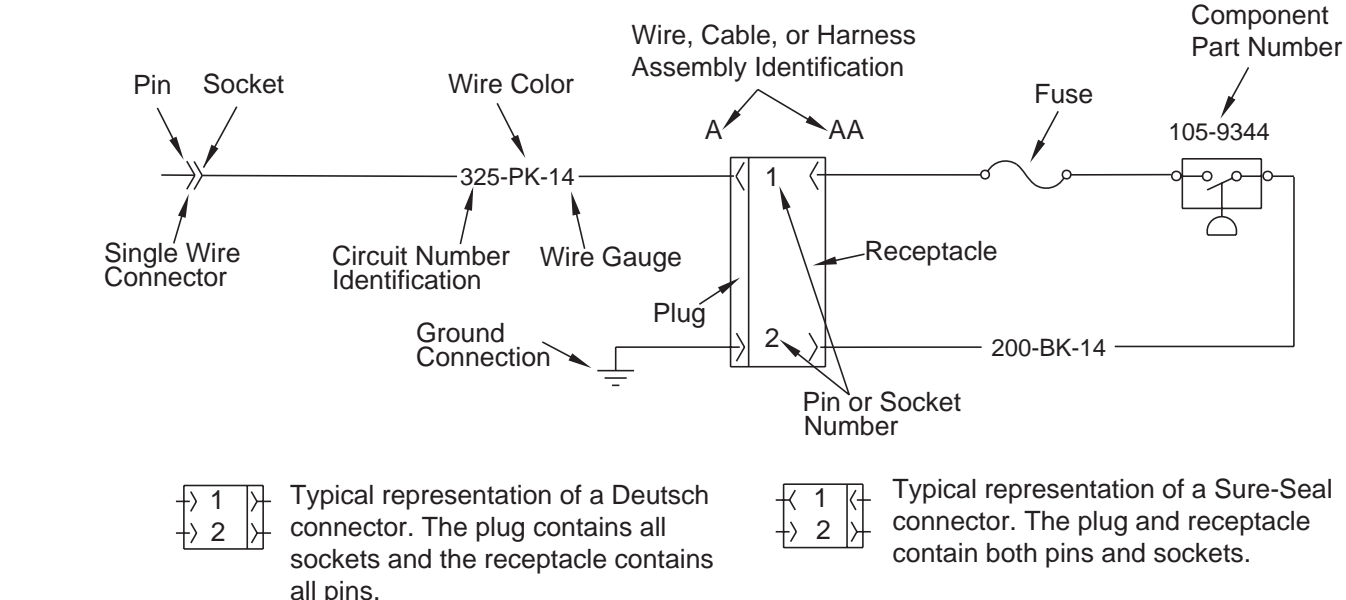
4JR1-UP
4WR1-UP
6FR1-UP
6HR1-UP
6MR1-UP
7AR1-UP
9ZS1-UP

Electrical Schematic Symbols And Definitions



Normally open switch that will close with an increase of a specific condition (temp.-press.etc.). The circle indicates that the component has screw terminals and a wire can be disconnected from it.
Normally closed switch that will open with an increase of a specific condition. 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.
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.

Harness And Wire Symbols



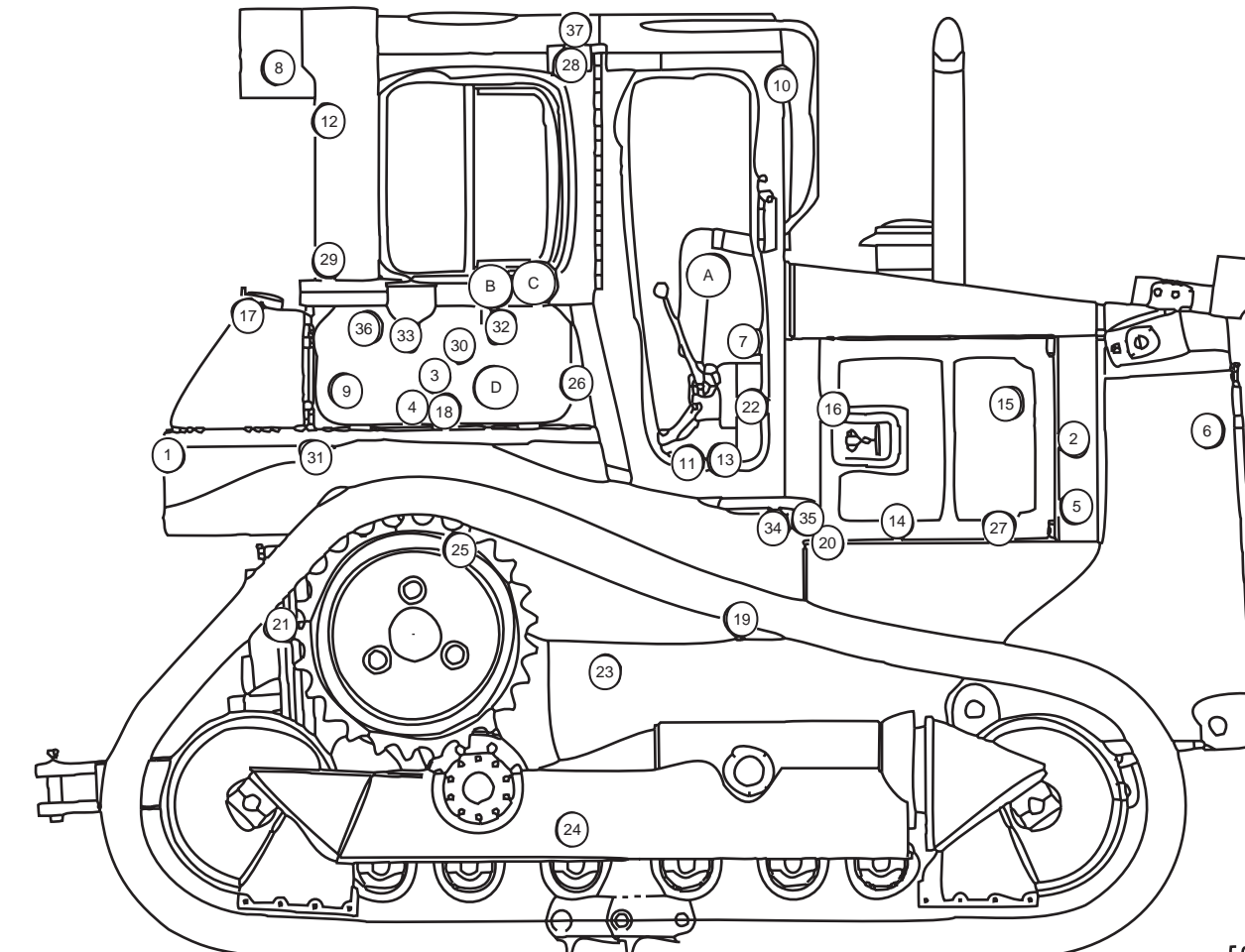
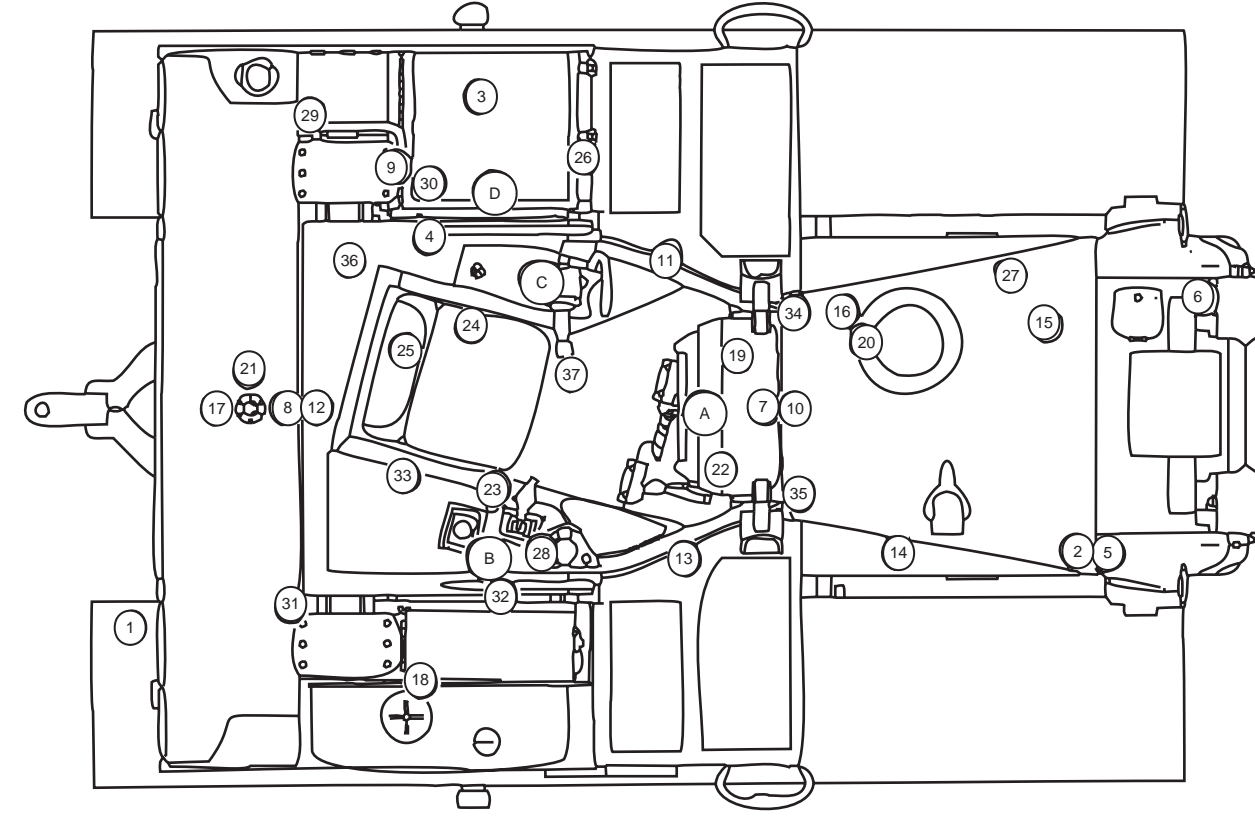
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Failure Mode Identifiers (FMI ¹) List	
FMI No.	Failure Description
0	Data valid but above normal operational range.
1	Data valid but below normal operational range.
2	Data erratic, intermittent, or incorrect.
3	Voltage above normal or shorted high.
4	Voltage below normal or shorted low.
5	Current below normal or open circuit.
6	Current above normal or grounded circuit.
7	Mechanical system not responding properly.
8	Abnormal frequency, pulse width, or period.
9	Abnormal update.
10	Abnormal rate of change.
11	Failure mode not identifiable.
12	Bad device or component.
13	Out of calibration.

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

Related Electrical Service Manuals	
Title	Form Number
Alternator 132-2156	SEN84547
Caterpillar Monitoring System	SEN8717
Starting Aid Charging System	SEN82947
Starting Motor 6V-5227	
Consult: 6V-5537	SEN3581
105-8552	SEN3536
6V-5538	SEN4975
Electronic Clutch Brake Control	SEN8367



Machine Harness Connector and Component Locations

Component Location					
Component	Schematic Location	Machine Location	Component	Schematic Location	Machine Location
Alarm - Action	A-4	A	Sender - Trans Output Speed 2	A-9	21
Alarm - Backup	D-12	1	Sensor - Brake Position	A-5	22
Alternator	B-1	2	Sensor - Direction	F-7	C
Battery	F-12	3	Sensor - Lever Position (Left)	F-7	C
Breaker - Alternator (80A)	E-11	D	Sensor - Lever Position (Right)	F-7	C
Breaker - Aux (20A)	E-11	D	Sensor - Transmission Temp	A-6	23
Breaker - Blower (20A)	F-11	D	Solenoid - A/C Clutch	B-1	5
Caterpillar Monitor	C-4	A	Solenoid - ECPC Pump	A-11	24
Control - ECB	B-11	C	Solenoid - First Gear Clutch 5	B-8	21
Converter - 24V to 12V	D-10	4	Solenoid - Forward Clutch 2	B-8	21
Diode (A/C Clutch)	B-1	5	Solenoid - Left Brake	C-8	25
Fuses	E-11	D	Solenoid - Left Steer Clutch	C-8	25
Gauge Cluster	C-4	A	Solenoid - Park Brake Dump	C-8	25
Horn - Forward (2)	F-1	8	Solenoid - Reverse Clutch 1	B-8	21
Indicator - Auto Downshift	B-6	A	Solenoid - Right Brake	C-8	25
Indicator Strip	C-6	A	Solenoid - Right Steer Clutch	B-8	25
Lamp - Action	C-4	A	Solenoid - Second Gear Clutch 4	B-8	21
Lamp - Pipe	D-4	A	Solenoid - Serv Brake Dump	C-8	25
Motor - Blower (2)	B-3	7	Solenoid - Third Gear Clutch 3	B-8	21
Motor - Condenser (2)	B-12	8	Starter	C-2	14
Motor - Console Raise/Lower	D-7	C	Switch - Auto Downshift	B-6	A
Motor - Washer (Front, Rear, Left, Right)	D-11	9	Switch - Bidirectional Mode	B-6	A
Motor - Wiper (Front)	E-4	10	Switch - Blower	C-6	A
Motor - Wiper (Left)	E-5	11	Switch - Console Raise/Lower	D-7	C
Motor - Wiper (Rear)	D-8	12	Switch - Disconnect	F-12	26
Motor - Wiper (Right)	B-6	13	Switch - Downshift	E-7	C
Relay - Condenser	B-12	8	Switch - Engine Oil	D-2	27
Relay - Main	F-11	D	Switch - Horn Forward	B-5	B
Relay - Start	F-11	D	Switch - Key Start	C-5	A
Resistor (Gauge Cluster)	D-4	A	Switch - Lamp	D-5	A
Resistor (Starter)	C-2	14	Switch - Operator Monitor	B-5	A
Resistor - Blower	B-3	7	Switch - Parking Brake	E-7	C
Sender - Coolant Temp	D-2	15	Switch - Power Train Filter	A-8	27
Sender - Engine Speed	E-1	16	Switch - Refrigerant	C-1	5
Sender - Fuel Level	D-12	17	Switch - Reverse	D-7	C
Sender - Hydraulic Oil Temp	A-8	18	Switch - Service Brake Pedal	B-5	22
Sender - Powertrain Oil Temperature	A-11	19	Switch - Start Aid	C-6	A
Sender - Trans Input Speed	A-11	20	Switch - Upshift	E-7	C
Sender - Trans Intermediate Speed 1	A-9	21	Switch - Wiper (Front, Rear, Left, Right)	A-7, A-8	28
Sender - Trans Intermediate Speed 2	A-9	21	Thermostat	B-3	5
Sender - Trans Output Speed 1	A-9	21			

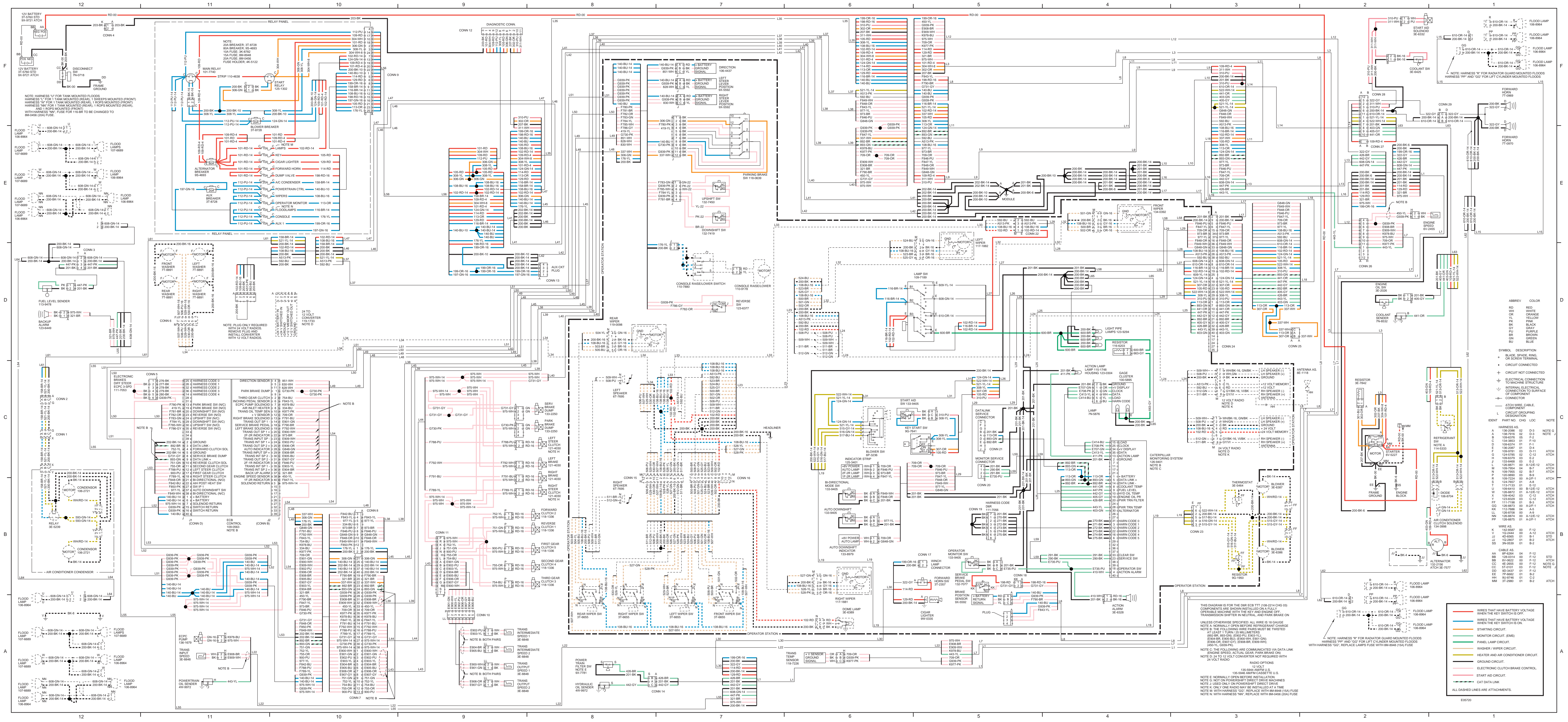
Machine location are repeated for components located close together
A = Operator Compartment - Front Dash
B = Operator Compartment - Right Console
C = Operator Compartment - Left Console
D = Operator Compartment - Fuse Panel

Off Machine Switch Specification				
Part No.	Function	Actuate	Deactuate	Contact Position
8X-7781	Power Train Filter Pressure	210 ± 7 (kPa) (30 ± 1 (psi))	-	Normally Open
114-5333	Refrigerant Pressure (AC)	275 to 1750 kPa ¹ (40 to 250 (psi))	-	Normally Open ²
3E-2026	Engine Oil Pressure	60 kPa MAX (8.7 psi MAX)	38 ± 20 kPa (5.5 ± 2.9 (psi))	Normally Open
3E-6425	Coolant Temperature (Start Aid)	110.0 ± 6.4 (°F) (43.3 ± 3.5 (°C))	27 °C MAX (80.9 (°F))	Normally Closed

¹With increasing pressure the closed condition can be maintained up to 2800 kpa (400 psi), with decreasing pressure the closed condition can be maintained down to 170 kpa (25psi).
²Contact position at the contacts of the harness connector.

Resistor, Sender and Solenoid Specifications		
Part No.	Component Description	Resistance (Ohms) ¹
3E-5239	Relay - Condenser	360
101-7740	Relay - Main Power	53 ± 5.3
125-1302	Relay - Start	27.5 ± 2.8
116-6203	Resistor - Gauge	20 ± 1
9G-1950	Resistor - Blower Motor Speed	Overall 2.0 ± .1, Tap 1.0 ± .05
3E-7942	Resistor - Starter/Diagnostic Conn	150 ± 7.5
134-3999	Solenoid - A/C Clutch	17.6 ± 0.6
3E-6332	Solenoid - Start Aid	6.0

¹ At room temperature.



SYMBOL	DESCRIPTION
(Symbol)	BLADE SPICE WELD
(Symbol)	CIRCUIT CONNECTED
(Symbol)	CIRCUIT NOT CONNECTED
(Symbol)	ELECTRICAL CONNECTION TO MACHINE STRUCTURE
(Symbol)	CONNECT TO SURFACE OF COMPONENT
(Symbol)	CONNECTOR
ABBREVIATION	
RD	RED
OR	ORANGE
YL	YELLOW
PK	PINK
BR	BROWN
PU	PURPLE
GR	GRAY
GN	GREEN
BL	BLUE

NOTE: Wires that have battery voltage when the key switch is OFF.
NOTE: Wires that have battery voltage when the key switch is ON.
NOTE: A normally open resistor change unless otherwise specified. All wires are 14 gauge unless otherwise specified. Wires must be twisted together.
NOTE: The following are communication data links.
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- Wires that have battery voltage when the key switch is OFF.
- Wires that have battery voltage when the key switch is ON.
- Starting circuit.
- Monitor circuit (EMO).
- Washer/wiper circuit.
- Heater and air conditioner circuit.
- Ground circuit.
- Electrical chassis control.
- Static air circuit.
- Car data link.