

Harness Connector Location Chart			
Connectors	Machine Location	Harness And/Or Components	Schematic Location
20 CONTACTS	B	A- 6V7374 (DS) Operator Monitor (EMS)	E-4
		A- 6V7372 (CBS) Operator Monitor (EMS)	F-7
9 CONTACTS	A	A- 6V7374 (DS) C- 778326	D-6
		A- 6V7372 (CBS) G- 9U8458 Attachment	D-6
8 CONTACTS	D ¹	G- 9U8458 Attachment H- 9U9403 Attachment	C-7
		G- 9U8458 Attachment H- 9U9403 Attachment	C-8
7 CONTACTS	1	A- 6V7374 (DS) B- 6V7377	B-4
		A- 6V7372 (CBS) B- 6V7377	E-3
6 CONTACTS	1	A- 6V7374 (DS) B- 6V7377	D-3
		A- 6V7372 (CBS) B- 6V7377	A-5
	2	A- 6V7372 (CBS) E- 9U9403 (DS)	A-5
		A- 6V7374 (DS) Voltage Converter	E-3
A- 6V7372 (CBS) Voltage Converter	E-3		

EMS = Electronic Monitoring System (operator monitor)
DS = Differential Steer Machines
CBS = Clutch/Brake Steer Machines

Machine locations are repeated for connectors located close together.
* = Connector is located at the component.
A = Connector in dash area.
B = Connector at relay panel.
D = Connector in headliner of operators compartment.

OFF MACHINE SWITCH SPECIFICATIONS				
Part No.	Function	Actuate	Deactuate	Normal Condition
3T5825	Power Train Oil Temperature (EMS)	129.4 ± 2.8°C (265 ± 5°F)	118.3°C MIN (245°F MIN)	Normally Closed
7N9785	Engine Coolant Temperature (EMS)	107.2 ± 2.8°C (225 ± 5°F)	91.0° MIN (196°F MIN)	Normally Closed
7T0998	Engine Oil Pressure (EMS)	62 ± 21 kPa (9.0 ± 3.0 psi)	38 ± 21 kPa (5.0 ± 3.0 psi)	Normally Open
8N1693	Engine Coolant Temperature (EMS)	137.8 ± 2.8°C (100 ± 5°F)	26.7°C MIN (80°F MIN)	Normally Closed
8N2248	Hydraulic Oil Temperature (Differential Steer EMS)	101.7 ± 2.8°C (215 ± 5°F)	93.3°C MIN (200°F MIN)	Normally Closed
9G1300	Hydraulic Oil Temperature (Clutch/Brake Steer EMS)	110.0 ± 2.8°C (230 ± 5.0°F)	101.7°C MIN (215°F MIN)	Normally Closed
9G3341	Power Train Oil Temperature (EMS)	51.7 ± 2.8°C (125 ± 5°F)	43.0°C MIN (110°F MIN)	Normally Closed
9W3187	Fuel Pressure (EMS)	93 ± 21 kPa (13.5 ± 3.0 psi)	69 ± 21 kPa (10.0 ± 3.0 psi)	Normally Closed
9X7781	Power Train Filter Pressure (EMS)	210 ± 70 kPa (30 ± 10 psi)	---	Normally Open

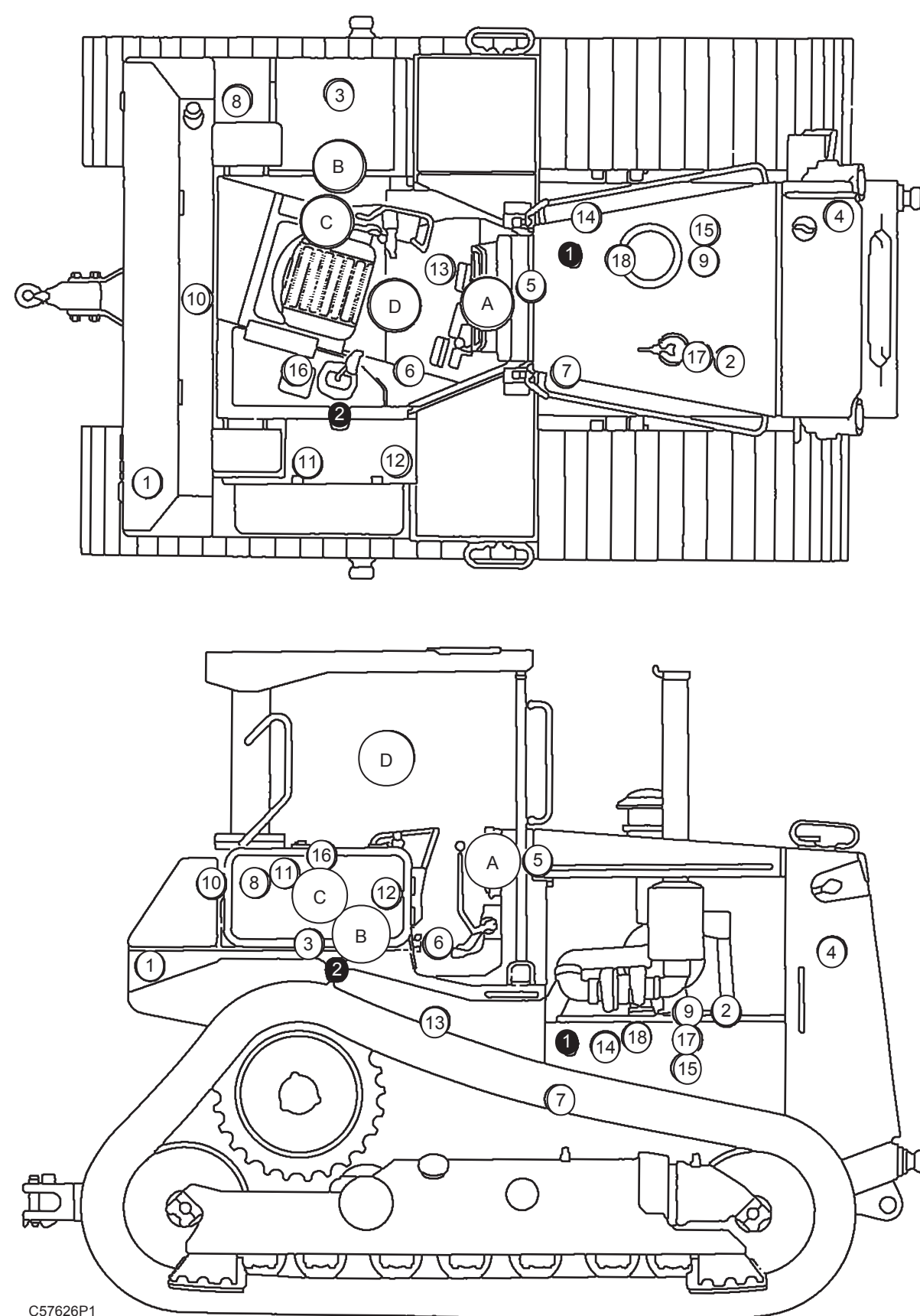
RESISTOR AND SOLENOID SPECIFICATIONS		
Component	Part Number	Resistance (Ohms) ¹
Resistor - Load	7X8416	50 ± 5.0
Resistor - Blower Motor Speed	2G0413	5
Resistor - Blower Motor Speed	9G1950	Overall 2.0 ± .1 Tap 1.0 ± .05
Resistor - Starter/Diagnostic Conn	6T2217	150 ± 7.5
Solenoid - A/C Clutch	8T8813	14.4 ± 0.6
Solenoid - Start Aid	9G4365	6.0

Related Service Manuals	
Title	Form Number
Alternator (1005047)	SEN2082
Alarm - Backup (1005046)	SEN4130
Consist No. 1005046	
Consist No. 1005045	
Electronic Monitoring System	SEN2945
Starting and Charging Systems	SEN2947
Starting Motor (4N3181)	SEN3581
Consist No. 8X3651 (424-MT)	SEN4975
Consist No. 9X4447 (F8)	SEN3536
Consist No. 3T6305 (KE)	

Component Location				
Component	Schematic Location	Vehicle Location	Component	Schematic Location
Alarm - Action (EMS)	D-8	C	Sender - Hydraulic Oil Temp (CBS Gauge)	A-7
Alarm - Backup	E-9	1	Sender - PT Oil Temp (Gauge)	B-2
Alternator	B-1	2	Solenoid - A/C Clutch	B-2
Batteries	F-3	3	Solenoid - Start Aid	F-2
Breaker - Alternator (80A)	E-7	B	Switch - Backup Alarm (DS)	E-7
Breaker - Blower (A/C)	F-6	B	Switch - Backup Alarm (GHS)	D-7
Converter - Voltage	E-3	C	Switch - Blower Motor (A/C)	D-7
Filter - Alternator	B-5	A	Switch - Blower Motor (Heater)	C-8
Fuse - Front Dash & Dome (10A)	E-7	B	Switch - Disconnect	F-3
Fuse - Key (10A)	F-7	B	Switch - Engine Coolant Temp (EMS)	C-2
Fuses	E-6	B	Switch - Engine Coolant Temp (Start Aid)	D-2
Gauges	B-5	A	Switch - Engine Oil Pressure (EMS)	B-2
Ground - Module	D-4	A	Switch - Flood Lamp	B-6
Horns - Front	F-1	4	Switch - Forward Horn	B-5
Lamp - Action (EMS)	D-8	A	Switch - Forward Dash Lamp	C-8
Meter - Service	D-4	7	Switch - Hydraulic Press (EMS)	C-2
Monitor - Operator (EMS)	D-4	7	Switch - Hydraulic Oil Temp (DS EMS)	A-6
Motor - Blower (A/C)	B-3, C-3	6	Switch - Hydraulic Oil Temp (CBS EMS)	A-7
Motor - Blower (Heater)	B-3	6	Switch - Key Start	C-5
Motor - Starting	D-7	8	Switch - Neutral Start (DS)	D-7
Motor - Windshield Washer	K-8	8	Switch - Neutral Start (CBS)	D-7
Motors - Wiper (Front & Left)	L-4, D-7	D	Switch - PT Filter Press (DS EMS)	A-6
Motors - Wiper (Rear & Right)	L-6, B-6	D	Switch - PT Filter Press (CBS EMS)	A-8
Radios (12V & 24V)	D-4	D ¹	Switch - PT Oil Temp (DS EMS)	A-6
Relay - Main (Replaces Terminal Block)	F-6	B	Switch - PT Oil Temp (EMS)	C-2
Relay - Start	F-6	B	Switch - PT Oil Temp (CBS EMS)	C-2
Resistor - Blower Motor Speed (A/C)	B-3	6	Switch - Refrigerant Press	F-2
Resistor - Blower Motor Speed (Heater)	B-3	6	Switch - Start Aid	C-8
Resistor - Load	F-6	B	Switch - Test (EMS)	D-8
Resistor - Starter to Diagnostic Conn	B-2	7	Switch - Thermostat (A/C)	B-3
Sender - Engine Coolant Temp (Gauge)	D-2	9	Switches - Wiper	B-7, B-8
Sender - Fuel (Gauge)	D-2	10	Terminal Block	F-6
Sender - Hydraulic Oil Temp (DS Gauge)	A-6	11		

A/C = Air Conditioning
EMS = Electronic Monitoring System (Operator Monitor)
DS = Differential Steer Machines
CBS = Clutch/ Brake Steer Machine
PT = Power Train

Machine locations are repeated for components located close together.
A = Components in dash area.
B = Components at relay panel.
C = Components in operators left console.
C¹ = Components within diff steer control handle of operator's left console.
D = Components in operator compartment.
D¹ = Components in headliner of operators compartment.



MACHINE HARNESS CONNECTOR AND COMPONENT LOCATIONS

CATERPILLAR®

SENR5284
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Schematic

D7H Series II Tractor Electrical System

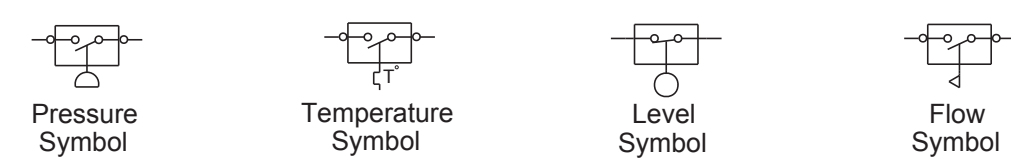
4AB4000-UP
5WB4000-UP
5BF4000-UP
2RG4000-UP
3XG4000-UP
4FG4000-UP
79Z4000-UP
80Z4000-UP

Wire Description			
Wire Number	Wire Color	Description	Description
Power Circuits			
101	RD	Bat (+)	500 BR Wiper - Front (Park)
102	BU	Hd Lmp	501 GN Wiper - Front (Low)
105	BR	Key Sw	502 OR Wiper - Front (HI)
108	BU	AUX CKT	503 BR Wiper - Rear (Park)
109	OR	Alt Output (+) Term.	504 YL Wiper - Rear (Low)
112	PU	Main Power Rly Output	505 BU Wiper - Rear (HI)
113	OR	Opr Mon Panel B (+) Switched	508 PU Radio Speaker - Left
114	GN	Warning Horn (Forward)	509 WH Radio Speaker - Left (Common)
116	BR	Aux Ckt	510 YL Washer - Primer
121	YL	Backup Alarm to Lamp	511 BR Radio Speaker - Right
124	GN	A/C	512 GN Radio Speaker - Right (Common)
129	BU	Aux Ckt	513 OR A/C Compressor/Refrigerant Pressure SW
Ground Circuits			
200	BK	Main Chassis	515 GY Blower Motor (HI)
201	BK	Operator Monitor Return	516 GN Blower Motor (Medium)
203	BK	Chasis Diagnosis	517 BU Blower Motor (Low)
207	BK	Starter Diagnosis	521 YL A/C SW To Refrigerant SW
Basic Machine Circuits			
301	BU	Starter No. 1 Sol	522 WH A/C Clutch To Thermostat SW
302	OR	Starter No. 1 Resistor to Diagnosis	
304	WH	Starter Relay No. 1 Output	600 BR Dash Basic
306	GN	Starter Relay Coil	608 GN Flood Rear
307	OR	Key SW to Neaut Start SW	609 YL Flood Side
308	YL	Main Power Relay Coil	610 OR Head Lamp Basic
310	PU	Start Aid SW To Start Aid Sol	
311	WH	Start Aid Sol To Temp SW	
321	BR	Bckp Alarm	
322	GY	Warning Horn (Forward)	
Monitoring Circuits			
403	GN	Alternator (R) Term.	
404	YL	Opr Mon Hyd Oil Temp	
405	GY	Opr Mon Oil Press. (Low Setting)	
406	PU	Opr Mon Coolant Temp	
410	WH	Opr Mon Action Alarm	
411	PK	Opr Mon Master	
413	BR	Opr Mon Fuel Press.	
415	GN	Opr Mon Test SW	
424	GY	Opr Mon Power Train Temp	
426	BR	Opr Mon Power Train Oil Filter	
441	OR	Eng Coolant Temp Gauge	
442	GY	Hyd System Temp Gauge	
443	YL	Power Train Temp Gauge	
447	PK	Fuel Level Gauge	

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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.

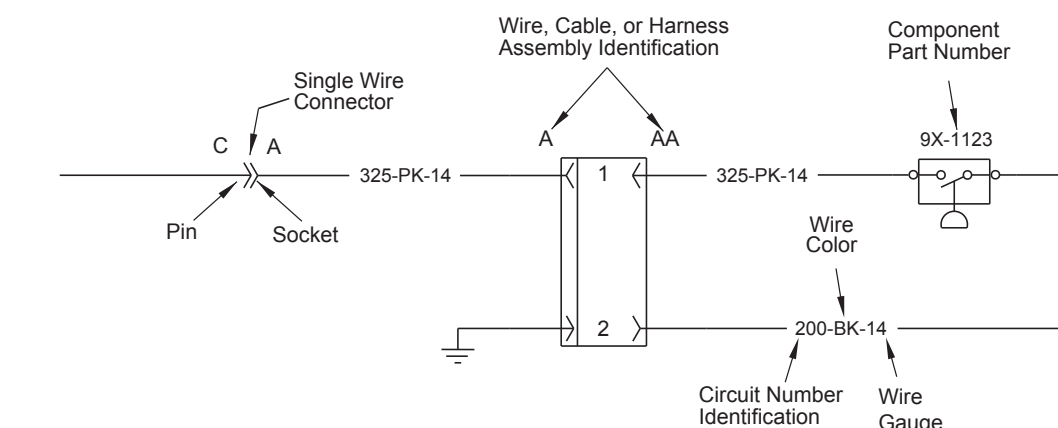
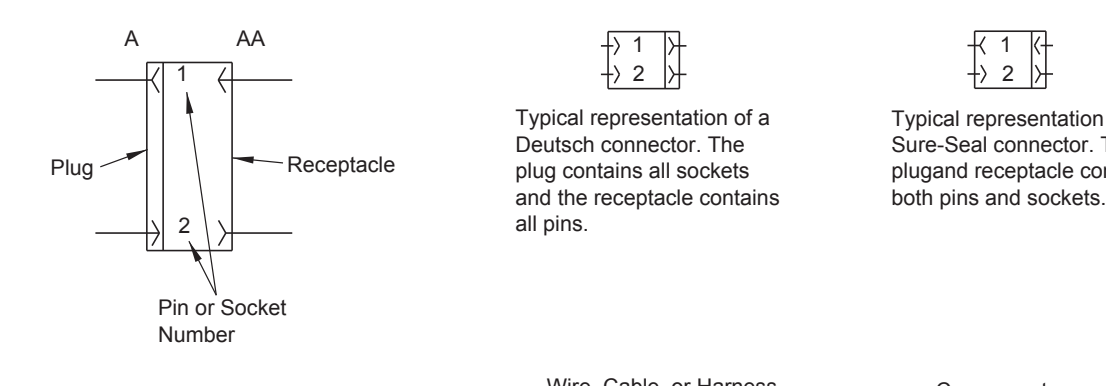
The circle indicates that the component has screw terminals and a wire can be disconnected from it.

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.

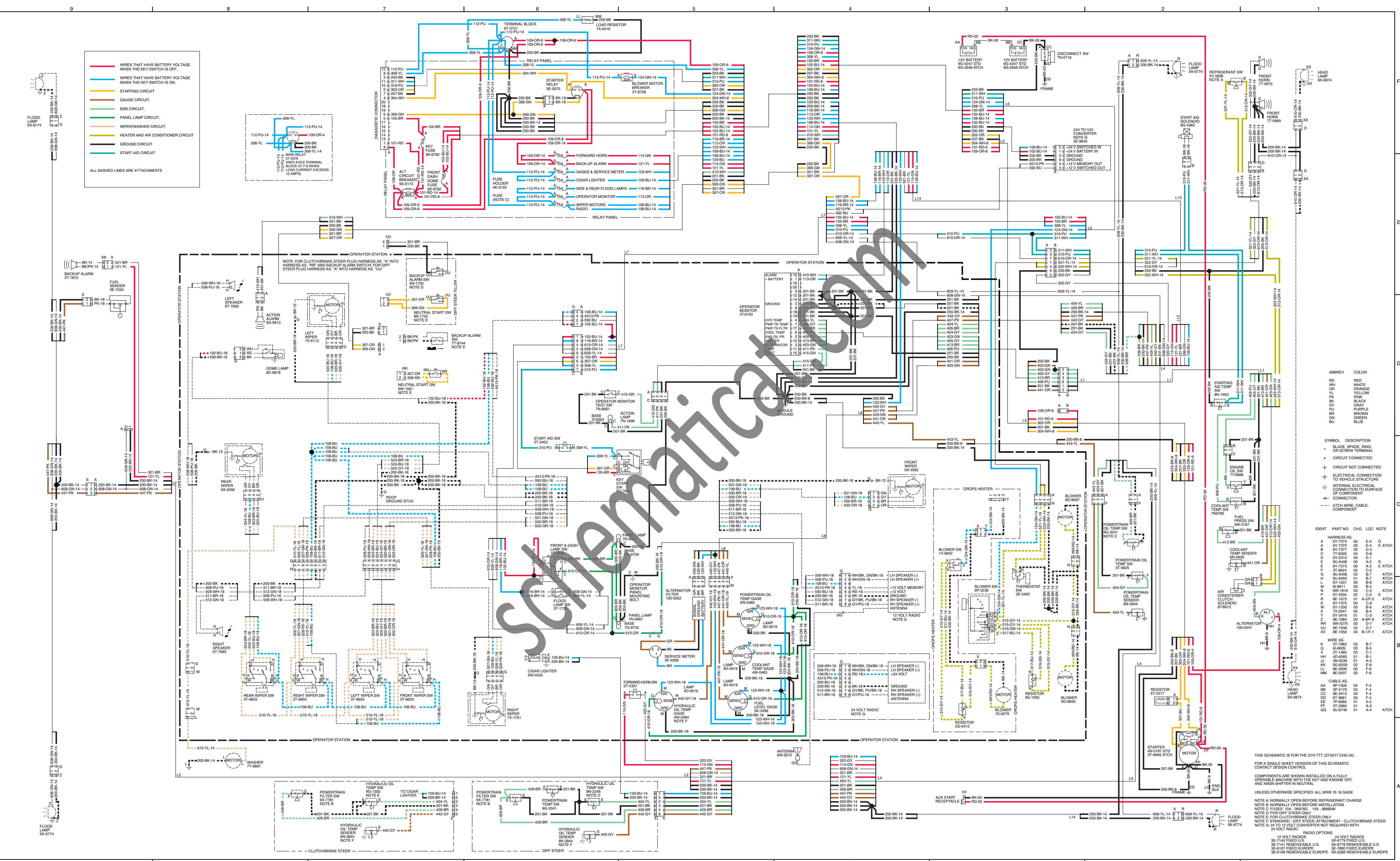
SENDER - A component that is used with a temperature or pressure gauge. The sender measures the temperature or pressure. Its resistance changes to give an indication to the gauge of the temperature or pressure.

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.

MAGNETIC LATCH SOLENOID - A magnetic latch solenoid is an electrical component that is activated by electricity and held latch 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.



- WIRES THAT HAVE BATTERY VOLTAGE WHEN THE KEY SWITCH IS OFF.
 - WIRES THAT HAVE BATTERY VOLTAGE WHEN THE KEY SWITCH IS ON.
 - STARTING CIRCUIT.
 - GAUGE CIRCUIT.
 - EMS CIRCUIT.
 - PANEL LAMP CIRCUIT.
 - WIPER/WASHER CIRCUIT.
 - HEATER AND AIR CONDITIONER CIRCUIT.
 - GROUND CIRCUIT.
 - START AID CIRCUIT.
- ALL DASHED LINES ARE ATTACHMENTS

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

- SYMBOL DESCRIPTION
- BLADE SPADE RING OR SCREW TERMINAL
- CIRCUIT CONNECTED
- CIRCUIT NOT CONNECTED
- ELECTRICAL CONNECTION TO VEHICLE STRUCTURE
- INTERNAL ELECTRICAL CONNECTION TO SURFACE OF COMPONENT
- CONNECTOR
- ATCH WIRE, CABLE, COMPONENT

IDENT	PART NO.	CHG	LOC	NOTE
A	67-7374	00	E-4	ATCH
B	67-7372	04	D-3	ATCH
C	67-7377	00	D-3	ATCH
D	77-6208	04	D-6	ATCH
E	67-2510	00	E-1	ATCH
F	93-9408	02	B-1	ATCH
G	67-7373	00	E-4	ATCH
H	93-9463	01	B-7	ATCH
I	67-1201	01	B-4	ATCH
J	68-8611	00	C-4	ATCH
K	67-2934	02	C-2	ATCH
L	86-1075	01	A2F-2	ATCH
M	67-1200	00	B-8	ATCH
N	67-2941	00	B-4	ATCH
O	67-3416	01	C-3	ATCH
P	86-1884	00	A9F-9	ATCH
Q	9W-5275	00	D-7	ATCH
R	86-1528	00	D-1	ATCH
XX	86-1656	00	B-1F-1	ATCH

THIS SCHEMATIC IS FOR THE D7H TTT (31-937) CHG 04
 FOR A SINGLE SHEET VERSION OF THIS SCHEMATIC CONTACT DESIGN CONTROL

COMPONENTS ARE SHOWN INSTALLED ON A FULLY OPERABLE MACHINE WITH THE KEY AND ENGINE OFF, AND AMXN SHIFTER IN NEUTRAL.

UNLESS OTHERWISE SPECIFIED, ALL WIRE IS 16 GAUGE

NOTE A: NORMALLY OPEN BEFORE REFRIGERANT CHARGE
 NOTE B: NORMALLY OPEN BEFORE INSTALLATION
 NOTE C: FUSES 10A - 30A/75
 NOTE D: FOR DIFF STEER ONLY
 NOTE E: FOR CLUTCH/BRAKE STEER ONLY
 NOTE F: STANDARD - OFF STEER ATTACHMENT - CLUTCH/BRAKE STEER
 NOTE G: 24 TO 12V CONVERTER NOT REQUIRED WITH 24 VOLT RADIO

RADIO OPTIONS

12 VOLT RADIOS	24 VOLT RADIOS
SE-7140 REMOVABLE U.S.	8X-6779 FIXED U.S.
SE-6107 REMOVABLE U.S.	8X-6778 REMOVABLE U.S.
SE-6107 REMOVABLE EUROPE	SE-7890 FIXED EUROPE
SE-6108 REMOVABLE EUROPE	8X-6780 REMOVABLE EUROPE