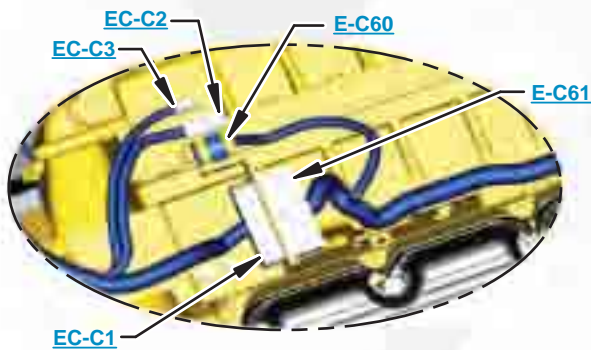




This document is best viewed at a screen resolution of 1024 X 768.

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

D8R Track-Type Tractor Electrical System

7XM1-UP
9EM1-7399

COMPONENT LOCATION



Component	Schematic Location	Machine Location	Component	Schematic Location	Machine Location
Action - Alarm	D-7	C	Hydraulic (Gauge) - Sender	A-7	18
Backup - Alarm	F-9	1	Powertrain Oil (Gauge) - Sender	A-3	19
Alternator	A-1	2	Air Conditioner Clutch - Solenoid	A-2	16
12 Volt - Batteries	F-6	3	Diverter Valve - Solenoid	E-8	20
Alternator (60A) - Breaker	E-8	E	Prelube Timer - Solenoid	D-2	12
Blower Motor (20A) - Breaker	F-7	E	Ripper Pin Puller - Solenoid	C-9	20
Breaker - Remote Condenser (20A)	F-7	E	Start Aid - Solenoid	B-2	21
Bus Bar	F-2	4	Arc - Suppressor	A-2	16
Voltage - Converter	F-5	5	A/C Refrigerant Pressure - Switch	B-2	16
Alternator - Filter	B-5	B	Backup Alarm - Switch	D-7	C
Fuses	E-7	E	Blower - Switch	D-6	7
Coolant Temp - Gauge	A-6	B	Coolant Temperature - Switch	B-2	22
Fuel Level - Gauge	A-5	B	Disconnect - Switch	F-5	14
Hydraulic Oil Temp - Gauge	B-5	B	Diverter Valve - Switch	A-7	23
Powertrain Temp - Gauge	B-6	B	Engine Coolant Flow (EMS) - Switch	B-2	24
Horn - Forward	E-1	6	Engine Coolant Temperature (EMS) - Switch	B-2	22
Action - Lamp	C-5	B	Engine Oil Pressure (EMS) - Switch	B-2	25
Cigar - Lighter	B-7	D	Flood Lamp - Switch	C-5	B
Service - Meter	B-6	B	Forward Horn - Switch	A-7	D
Operator - Monitor	C-6	B	Front Wiper - Switch	B-7	A
Blower - Motor	D-4,C-4	7	Fuel Pressure (EMS) - Switch	B-2	26
Condenser - Motor	B-9	7	Hydraulic Oil Temp (EMS) - Switch	A-7	18
Front Wiper - Motor	B-4	8	Hydraulic Oil Filter Press (EMS) - Switch	A-9	27
Left Wiper - Motor	F-5	9	Switch - Hydraulic Oil Filter Temp (EMS)	A-9	27
Rear Wiper - Motor	D-8	10	Key Start - Switch	D-5	B
Right Wiper - Motor	A-6	11	Left Wiper - Switch	B-7	A
Starter (Prelube Atch) - Motor	E-2	12	Neutral/Start - Switch	D-7	C
Washer Pump - Motor	A-8	13	Oil Pressure (Atch) - Switch	D-2	12
Power - Outlet	B-7	14	Operator Monitor Test - Switch	C-5	B
Radio	A-5	A	Powertrain Oil Filter Press (EMS) - Switch	A-8	27
Aux Start - Receptacle	F-2	15	Powertrain Oil Temp (EMS) - Switch	A-3	19
Relay	B-9	7	Powertrain - Switch n Oil Filter Temp (EMS)	A-8	27
Main - Relay	F-8	E	Rear Wiper - Switch	B-8	A
Start - Relay	F-7	E	Right Wiper - Switch	B-8	A
Blower Motor Speed - Resistor	C-4	7	Ripper Pin Puller - Switch	A-8	D
Starter Diagnostic - Resistor	F-1	12	Running Lamp - Switch	B-5	B
Coolant Temperature (Gauge) - Sender	A-2	16	Start Aid - Switch	D-5	B
Fuel (Gauge) - Sender	B-9	17	Thermostat (A/C) - Switch	E-6	7

Always check component part numbers with Parts Manual for your specific machine.

Machine locations are repeated for components located close together.

A = Components located in operator's compartment.

B = Components located in dash.

C = Components located in operator's left console.

D = Components located in operator's right console.

E = Components located on relay panel.

CONNECTOR LOCATION



Connector Number	Schematic Location	Machine Location
CONN 1	F-8	E
CONN 2	C-6	*
CONN 3	E-4	B
CONN 4	E-4	B
CONN 5	E-5	B
CONN 6	C-7	28
CONN 7	C-8	28
CONN 8	A-4	*
CONN 9	C-2	29
CONN 10	C-2	29
CONN 11	F-4	30
CONN 12	F-4	*
CONN 13	D-2	*
CONN 14	A-7	D
CONN 15	A-5	B
CONN 16	C-5	B
CONN 17	E-7	31
CONN 18	E-4	B
CONN 19	E-4	B
CONN 20	C-9	*
CONN 21	E-5	*
CONN 22	B-4	*
CONN 23	B-6	*
CONN 24	D-8	*

Machine locations are repeated for connectors located close together.

* = Connector is located at the component.

B = Components located in dash

D = Components located in operator's right console

E = Components located on relay panel

RESISTOR AND SOLENOID SPECIFICATIONS		
Component	Part No.	Resistance (Ohms) ¹
Resistor - Blower Motor Speed	9G-1950	Overall 2.0 ± .1; Tap 1.0 ± .05
Resistor - Starter/Diagnostic	6T-2217	150.0± 7.5
Solenoid - Air Conditioner Clutch	102-0347	14.4± 0.6
Solenoid - Diverter Valve	127-0574	31.0 ± 3.0
Solenoid - Ripper Pin Puller	9G-9988	24.9
Solenoid - Start Aid	3E-6332	6

¹At room temperature.

OFF MACHINE SWITCH SPECIFICATIONS				
Part No.	Function	Actuate	Deactuate	Normal Condition
3E-2030	Engine Coolant Flow (EMS)	362 ± 29 mN (1.3 ± 0.1 oz)	303 mN MIN (1.1 oz MIN)	Normally Open
3T-5825	Power Train Oil Temp (EMS)	129.4 ± 2.8°C (265.0 ± 5.0°F)	118.3°C (245.0°F)	Normally Closed
6T-4949	Engine Oil Pressure (EMS)	93.0 ± 21.0 kPa (13.5 ± 3.0 psi)	69.0 ± 21.0 kPa (10.0 ± 3.0 psi)	Normally Open
7N-9785	Engine Coolant Temp (EMS)	107.2 ± 2.8°C (225.0 ± 5.0°F)	91.0°C MIN (196.0°F MIN)	Normally Closed
8C-3569	Hydraulic Oil Filter Temp (EMS)	37.8 ± 2.8°C (100.0 ± 5.0°F)	26.7°C MIN (81.0°F)	Normally Closed
8N-1693	Engine Coolant Temp (St Aid)	37.8 ± 2.8°C (100.0 ± 5.0°F)	26.7°C MIN (80.0°F)	Normally Closed
8N-2248	Hydraulic Oil Temp (EMS)	101.7 ± 2.8°C (215.0 ± 5.0°F)	93.3°C MIN (200.0°F MIN)	Normally Closed
9G-3341	Power Train Oil Filter Temp (EMS)	51.7±2.8°C (125.0± 5.0°F)	43.0°C MIN (110.0°F MIN)	Normally Closed
9W-3187	Fuel Pressure (EMS)	93.0 ± 21.0 kPa (13.5 ± 3.0 psi)	69.0 ± 21.0 kPa (10.0± 3.0 psi)	Normally Closed
9X-7781	Hydraulic Oil Filter/ Power Train Filter Pressure (EMS)	210 ± 70 kPa (30± 10 psi)	-- --	Normally Open
105-9152	Oil Pressure (Atch)	30 ± 7 kPa (4.3± 1.0 psi)	30± 7 kPa (4.3 ± 1.0 psi)	Normally Closed
114-5334	Refrigerant Pressure (AC)	275 to 1750 kPa ¹ (40 to 255 psi)	-- --	Normally Open ²

¹ A hysteresis band exists: 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 No.
Alternator (100-5047): Consist No.100-5045 Consist No.100-5046	SENR4130 SENR2082
Electronic Monitoring System (EMS)	SENR2945
Starting And Charging Systems	SENR2947
Starting Motor: (6V-0890) Consist No. 6V-0890	SENR3860

WIRE DESCRIPTION



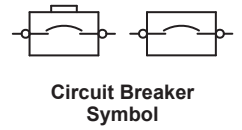
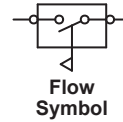
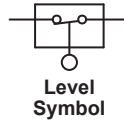
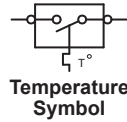
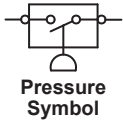
Wire Number	Wire Color	Description	Wire Number	Wire Color	Description
Power Distribution Circuits			Monitoring Circuits (cont'd)		
101	RD	BAT	415	GN	OPR MON TEST SW
102	BU	HD LMP	424	GY	OPR MON POWER TRAIN TEMP
105	BR	KEY SW	426	BR	OPR MON POWER TRAIN OIL FILTER
108	BU	AUX CKT	441	OR	ENG COOLANT TEMP GAGE
109	OR	ALT OUTPUT (+) TERM.	442	GY	HYD SYSTEM TEMP GAGE
112	PU	MAIN POWER RELAY OUTPUT	443	YL	POWER TRAIN TEMP GAGE
113	OR	OPR MON PANEL VMIS B+ SWITCHED	449	BU	SPDOM SENDER (SIGNAL NO.1)
114	GN	WARNING HORN (FORWARD)	499	GY	OPR MON IMPLEMENT OIL FILTER
116	BR	AUX CKT	A447	PK	PRELUBE OIL PRESS
121	YL	BACKUP ALARM TO LAMP	Accessory Circuits		
123	WH	AUX CKT	500	BR	WIPER - FRONT (PARK)
124	GN	A/C	501	GN	WIPER - FRONT (LO)
Ground Circuits			502	OR	WIPER - FRONT (HI)
200	BK	MAIN CHASSIS	503	BR	WIPER - REAR (PARK)
201	BK	OPR MON PANEL VMIS CMS	504	YL	WIPER - REAR (LO)
203	BK	CHASSIS DIAGNOSTIC	505	BU	WIPER - REAR (HI)
207	BK	STARTER DIAGNOSTIC	510	YL	WASHER - PRIMER
Basic Machine Circuits			513	OR	A/C COMPRESSOR/REFRIGERANT PRESS. SW
301	BU	STARTER NO.1 SOL	515	GY	BLOWER MOTOR (HI)
302	OR	STARTER NO.1 RESISTOR TO DIAGNOSTIC	516	GN	BLOWER MOTOR (MEDIUM)
304	WH	STARTER RELAY NO.1 OUTPUT	517	BU	BLOWER MOTOR (LO)
306	GN	STARTER RELAY COIL TO NEUT START SW OR KEY SW	521	YL	A/C SW TO REFRIGERANT SW
307	OR	KEY SW TO NEUT START SW OR VMIS SENSOR MODULE	522	WH	A/C CLUTCH TO THERMOSTAT SW
308	YL	MAIN POWER RELAY COIL	523	BR	WIPER - LEFT (PARK)
310	PU	START AID SW TO START AID SOL	524	BU	WIPER - LEFT (LO)
311	WH	START AID SOL TO TEMP SW	525	GY	WIPER. LEFT (HI)
321	BR	BCKP ALARM LAMP TRAVEL ALARM	526	YL	WIPER - RIGHT (PARK)
322	GY	WARNING HORN (FORWARD)	527	GN	WIPER. RIGHT (LO)
Monitoring Circuits			528	PK	WIPER - RIGHT (HI)
403	GN	ALTERNATOR (R)TERM.	600	BR	DASH LAMP BASIC
404	YL	OPR MON HYD OIL TEMP	608	GN	FLOOD LAMP - REAR
405	GY	OPR MON OIL PRESS. (LO SETTING)	609	YL	FLOOD LAMP - SIDE
406	PU	OPR MON COOLANT TEMP	610	OR	HEAD LAMP BASIC
410	WH	OPR MON FAULT ALARM	779	WH	COUPLER ENGAGE SOL
411	PK	OPR MON MASTER FAULT LAMP	780	PU	COUPLER DISENGAGE SOL
412	BU	OPR MON COOLANT FLOW	978	GN	CST AUTOSHIFT - SLOW MODE SW 1
413	BR	OPR MON FUEL PRESS.	987	WH	DIVERTER SOL

HARNESS and WIRE

Electrical Schematic Symbols



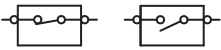
Symbols



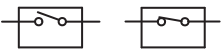
Symbols and Definitions



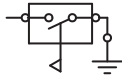
Fuse: A component in an electrical circuit that will open the circuit if too much current flows through it.



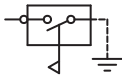
Switch (Normally Open): A switch that will close at a specified point (temp, press, etc.). The circle indicates that the component has screw terminals and a wire can be disconnected from it.



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.



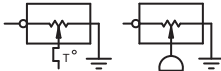
Ground (Wired): This indicates that the component is connected to a grounded wire. The grounded wire is fastened to the machine.



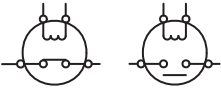
Ground (Case): This indicates that the component does not have a wire connected to ground. It is grounded by being fastened to the machine.



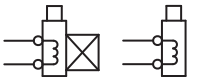
Reed Switch: A switch whose contacts are controlled by a magnet. A magnet closes the contacts of a normally open reed switch; it opens the contacts of a normally closed reed switch.



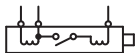
Sender: A component that is used with a temperature or pressure gauge. The sender measures the temperature or pressure. Its resistance changes to give an indication to the gauge of the temperature or pressure.



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.



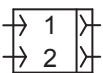
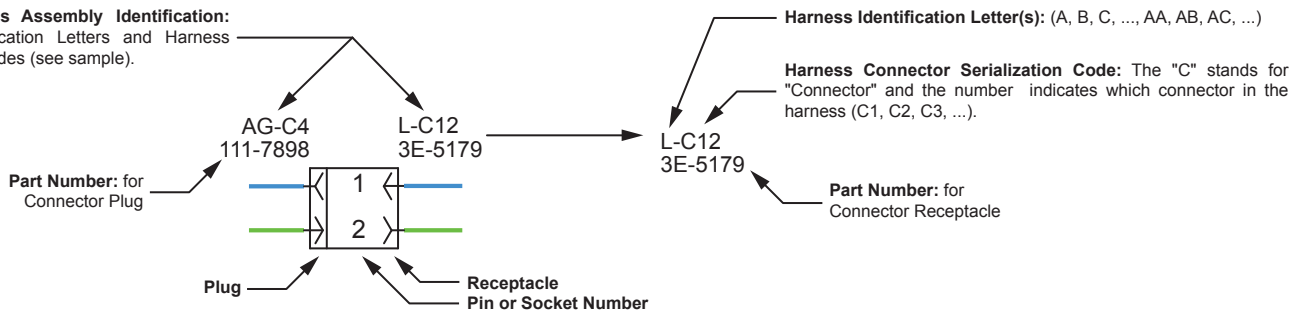
Solenoid: A solenoid is an electrical component that is activated by electricity. It has a coil that makes an electromagnet when current flows through it. The electromagnet can open or close a valve or move a piece of metal that can do work.



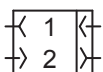
Magnetic Latch Solenoid: A magnetic latch solenoid is an electrical component that is activated by electricity and held latched by a permanent magnet. It has two coils (latch and unlatch) that make electromagnet when current flows through them. It also has an internal switch that places the latch coil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

Harness and Wire Symbols

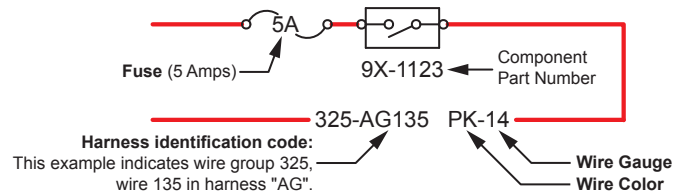
Wire, Cable, or Harness Assembly Identification: Includes Harness Identification Letters and Harness Connector Serialization Codes (see sample).

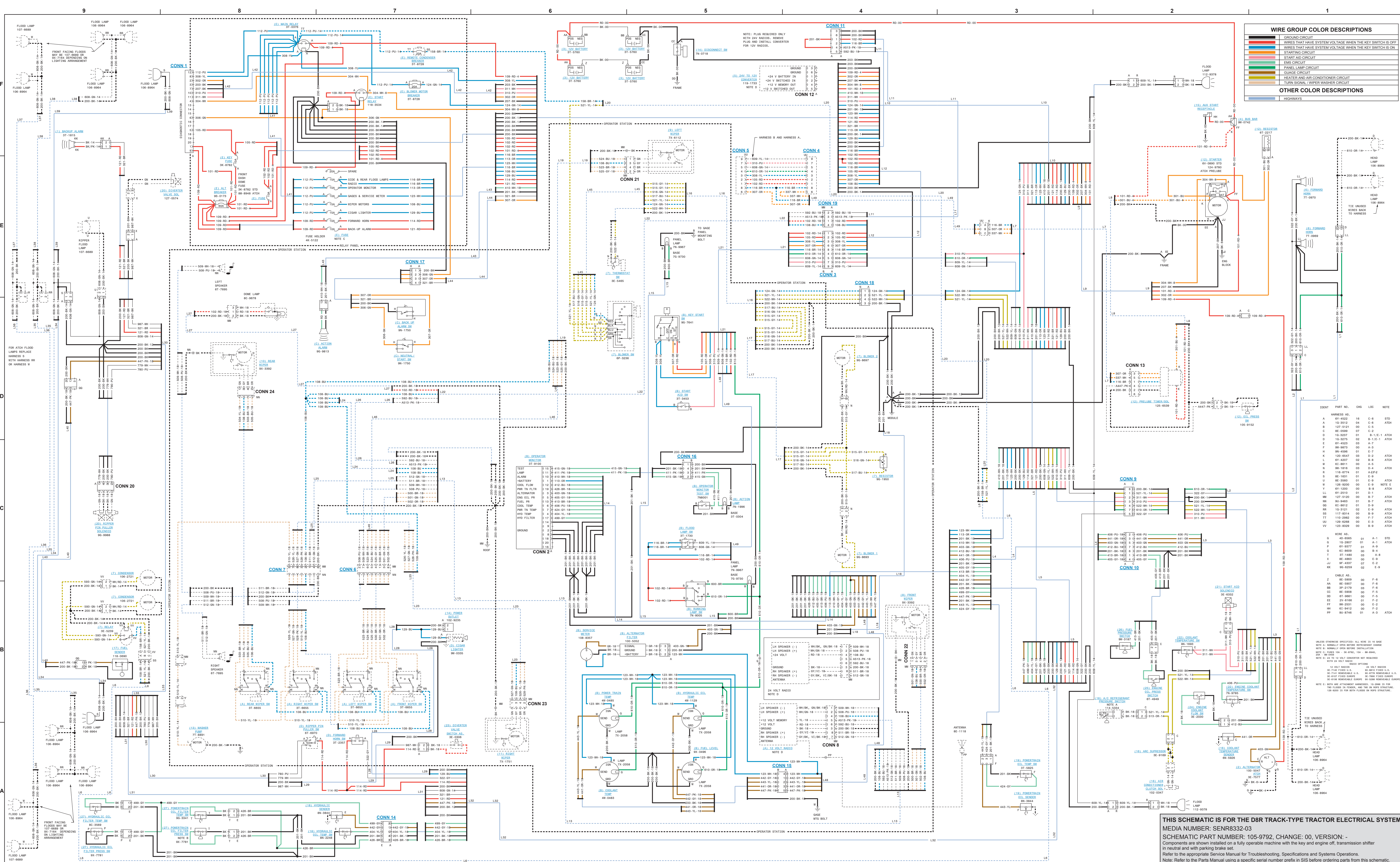


Deutsch connector: Typical representation of a Deutsch connector. The plug contains all sockets and the receptacle contains all pins.



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





WIRE GROUP COLOR DESCRIPTIONS

- GROUND CIRCUIT
- WIRES THAT HAVE SYSTEM VOLTAGE WHEN THE KEY SWITCH IS OFF
- WIRES THAT HAVE SYSTEM VOLTAGE WHEN THE KEY SWITCH IS ON
- STARTING CIRCUIT
- STARTER AID CIRCUIT
- EMS CIRCUIT
- PANEL LAMP CIRCUIT
- HEATER AND AIR CONDITIONER CIRCUIT
- TURN SIGNAL TURNER MARKER CIRCUIT

OTHER COLOR DESCRIPTIONS

- WIRING

THIS SCHEMATIC IS FOR THE D8R TRACK-TYPE TRACTOR ELECTRICAL SYSTEM
 MEDIA NUMBER: SENR8332-03
 SCHEMATIC PART NUMBER: 105-9792, 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.
 Note: Refer to the Parts Manual using a specific serial number prefix in SIS before ordering parts from this schematic.

ABBREV	COLOR	SYMBOL	DESCRIPTION
RD	RED	+	CIRCUIT CONNECTED
WH	WHITE	-	CIRCUIT NOT CONNECTED
OR	ORANGE	+	INTERNAL CONNECTION TO MACHINE STRUCTURE
YL	YELLOW	+	INTERNAL ELECTRICAL CONNECTION TO SERVICE OF COMPONENT
PK	PINK	-	CONNECTOR
BK	BLACK	+	CONNECTOR
GY	GRAY	+	CIRCUIT GROUPING DESIGNATION
PU	PURPLE	-	ATTACH WIRE, CABLE, COMPONENT
BR	BROWN	+	BPLICE
GN	GREEN	+	BLADE, BRACE, RING OR SCREW TERMINAL
BU	BLUE	+	

MACHINE COMPONENT AND CONNECTOR LOCATIONS

