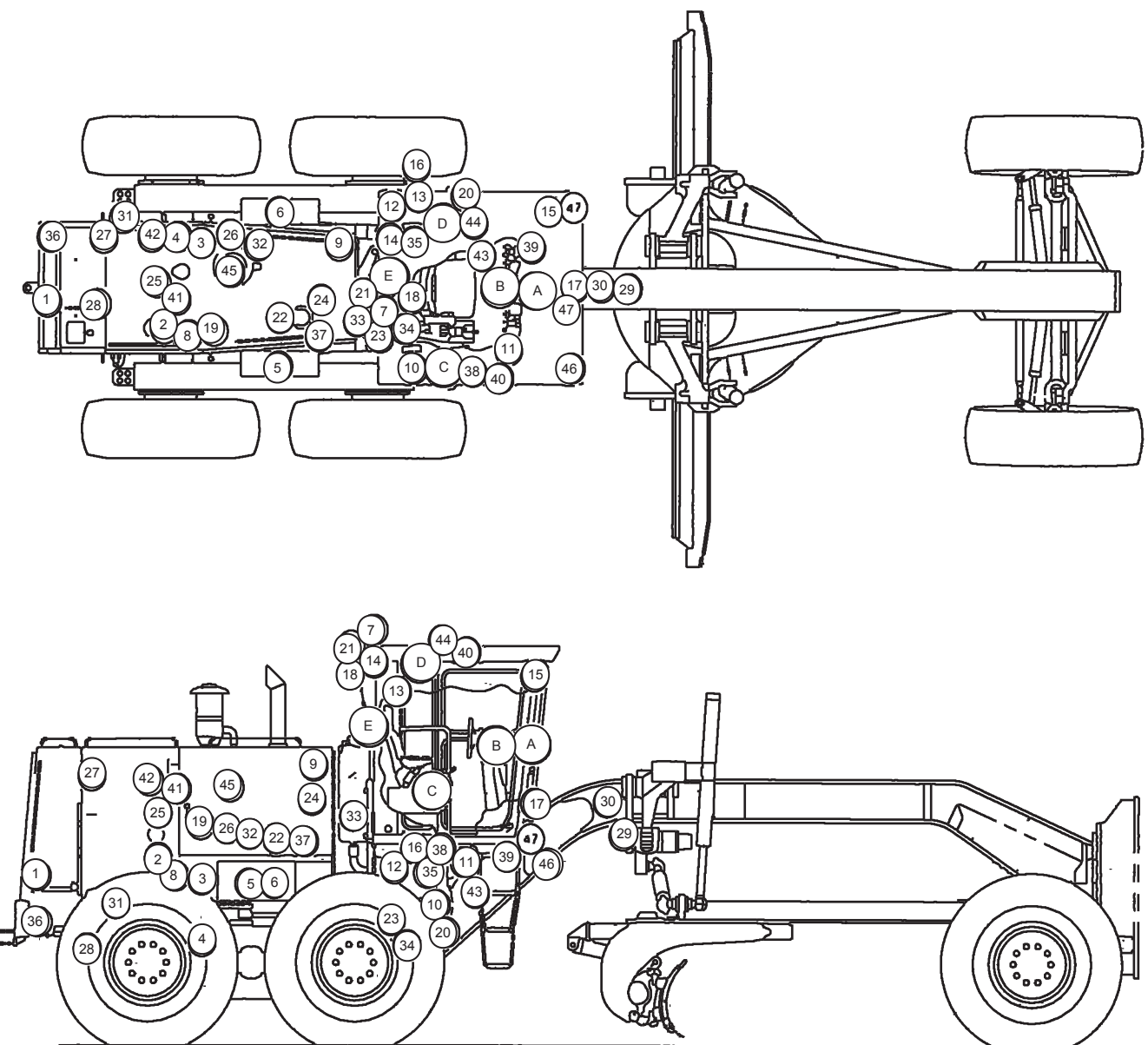


Connector Location*		
Connector Number	Schematic Location	Machine Location
CONN 1	C-15	31
CONN 2	D-15	31
CONN 3	C-15	31
CONN 4	A-14	41
CONN 5	A-14	27
CONN 6	A-14	8
CONN 6b	A-14	8
CONN 7 Starting and Charging Diagnostic	E-14	45
CONN 8	A-14	8
CONN 9	E-14	42
CONN 10	E-13	37
CONN 11	E-13	37
CONN 12	E-13	37
CONN 13	D-13	22
CONN 14	E-13	37
CONN 15	D-13	37
CONN 16	E-13	3
CONN 17	E-12	10
CONN 18	D-12	43
CONN 19	D-12	43
CONN 20	E-12	43
CONN 21	E-12	43
CONN 22	E-12	43
CONN 23	E-12	43
CONN 24	E-12	43
CONN 25	F-12	43
CONN 26	A-11	38
CONN 26b	B-11	38
CONN 26c	A-11	38
CONN 27	F-12	44
CONN 28a	B-10	C
CONN 28b	A-9	33
CONN 29	C-10	33
CONN 30	F-14	36
CONN 31	D-11	39
CONN 32	D-11	39
CONN 33	D-11	39
CONN 34	D-11	8
CONN 35	D-11	8
CONN 36	B-9	38
CONN 37	E-9	38
CONN 38	E-10	39
CONN 39	F-9	39
CONN 40	E-8	10
CONN 41	E-8	38
CONN 42	E-8	39
CONN 43	D-8	39
CONN 44	D-8	39
CONN 45	D-8	39
CONN 46	E-7	38
CONN 47	B-7	38
CONN 48 Service Tool	E-3	30
CONN 49	A-6	40
CONN 50	C-6	40
CONN 51	C-6	40
CONN 52	C-6	17
CONN 53	C-6	17
CONN 54	C-6	17
CONN 55	E-6	17
CONN 56	E-6	17
CONN 57	E-6	17
CONN 58	E-6	17
CONN 59	C-5	40
CONN 60	C-5	40
CONN 61	B-5	46
CONN 62	D-3	47
CONN 63	E-3	47
CONN 64	F-3	17
CONN 65	F-13	37

*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.



Machine Harness Connector and Component Locations E75310

Wire Description					
Wire Number	Wire Color	Description	Description		
Power Distribution Circuits					
101	RD	Bat (+)	506	PU	Washer - Front
102	RD	HS Lamp	507	WH	Washer - Rear
105	RD	Key SW	508	PU	Radio Speaker - Left
107	RD	Eng Shut	509	WH	Radio Speaker - Left (Common)
108	RD	Aux Ckt	511	BR	Radio Speaker - Right
109	RD	All Output (+) Term.	512	GN	Radio Speaker - Right (Common)
112	PU	Main Power Relay Output	513	OR	A/C Compressor/Refrigerant Pressure SW
113	OR	Opp Mon Panel B- Switched	515	GY	Blower Motor (Hi)
114	RD	Warning Horn (Forward)	516	GN	Blower Motor (Medium)
116	RD	Aux Ckt	517	BU	Blower Motor (Low)
118	BR	Aux Ckt	521	YL	A/C SW To Refrigerant SW
119	GY	Aux Ckt	522	WH	A/C Clutch To Thermostat SW
120	PK	Aux Ckt	523	GN	Turn Signal SW To Flasher
122	BU	Aux Ckt	528	OR	Hazard Indicator
124	GN	A/C	529	BU	Turn Signal
126	PK	Jeepn Ckt	556	WH	Differential Lock
130	RD	Aux Ckt	570	BU	Black Cushion Sol
134	RD	Aux Ckt	575	YL	Wiper - Aux (Park)
136	GN	Sec Ster	576	PK	Wiper-Aux (Low)
141	PK	Aux Ckt	577	PU	Wiper-Aux (Hi)
144	RD	Aux Ckt	578	BU	Washer-Aux
149	PU	Aux Ckt	584	YL	Wiper SW Jumper
151	GN	Aux Ckt	592	BU	DC/DC Converter Power Output
152	BU	Aux Ckt	597	PU	A/C Hi Press. Cutoff SW To Low Press. SW
160	PU	Aux Ckt	A50	PK	Front Defroster Fan (Low)
165	YL	Aux Ckt	A50	GN	Rear Defroster Fan (Low)
169	PK	Aux Ckt	A50	OR	Front Defroster Fan (Hi)
173	RD	Aux Ckt	A51	YL	Rear Defroster Fan (Hi)
176	OR	Aux Ckt	A51	PK	DC/DC Converter Memory Output
Ground Circuits					
200	BK	Main Chassis	600	BR	Dash Lamp Basic
201	BK	Operator Monitor Return	601	GY	Dash Lamp Hi
202	BK	XMSN Ckt	603	PK	Rotary Beacon
203	BK	Chassis Diagnostic	604	OR	Stop Lamp
207	BK	Starter Diagnostic	605	YL	Turn Lamp - Left
277	BK	XMSN Ckt (Ident Code 1)	606	GY	Turn Lamp - Right
278	BK	XMSN Ckt (Ident Code 2)	608	GN	Flood Lamp - Rear
Basic Machine Circuits					
301	BU	Starter Sol	610	OR	Head Lamp
302	OR	Starter Resistor to Diagnostic	611	PU	Head Lamp Hi
304	WH	Starter Relay No. 1 Output	614	PU	Park/Tail/Dash Lamp
306	GN	Starter Relay Coil To Rear Start SW Or Key SW	615	YL	Cap Flood Lamp
307	OR	Key SW To Rear Start SW	617	YL	Tail/Position Lamp
308	YL	Main Power Relay Coil	618	YL	Tail/Position Lamp
310	PU	Start Aid SW To Start Aid Sol	619	GN	Head Lamp Lo
311	WH	Start Aid Sol To Temp SW	646	OR	Sw to Front Flood Relay
321	BR	Bdcp Alarm Lamp Travel Alarm	668	BU	Head Lamp
322	GY	Warning Horn (Forward)			
Control Circuits					
326	RD	Key SW "C" Term	710	GN	XMSN Speed Pickup
334	BU	Start Aid Sol #2	727	GN	Sec Ster Motor Relay
373	GN	Start Aid Switch To Timer	728	BU	Sec Ster Cnt SW
403	GN	Alternator (Hi) Term	751	GN	XMSN Shift Sol No. 1 Cr 3
404	YL	Opp Mon Hyd Oil Temp	752	YL	XMSN Shift Sol No. 2
405	GY	Opp Mon Oil Press. (Low Setting)	754	BU	XMSN Shift Sol No. 3 Cr 1
406	PU	Opp Mon Coolant Temp	755	OR	XMSN Shift Sol No. 4 Cr 5
408	WH	Opp Mon System Air Press	758	GN	AWD Clutch SW
409	OR	Opp Mon Fuel-Air	795	YL	Dual Hp Sol
410	WH	Opp Mon Fuel-Air	778	BU	AWD To Inch Pedal SW
411	PK	Opp Mon Master	892	BR	Start Mod Right (-) Part/CAT Data Link (-)
413	BR	Opp Mon Fuel Press	893	GN	Start Mod Right (+) Part/CAT Data Link (+)
415	GN	Opp Mon Test SW	086	BU	+12 Volt Switch Power
417	GY	Primary Ster SW	900	PU	XMSN Shift Sol No. 4
419	YL	Opp Mon Parking Brake	901	WH	XMSN Shift Sol No. 6
439	YL	Lamp Indicator	902	BR	XMSN Shift Sol No. 7
441	OR	Eng Control Temp Gage	903	GY	XMSN Shift Sol No. 8
447	PK	Fuel Level Gage	921	WH	XMSN Sol No 1 Or 3 Return
449	BU	Spdm Sender (Signal No. 1)	977	YL	CST Autostr. Auto/Manual SW 1
450	YL	Tail Sender (1)	E93	PU	MG MESH CNTL - Rearward Neutral
462	YL	Sec Ster Motor Indicator	E93	OR	MG MESH CNTL - First Gear
467	WH	System Fault (Xmn)	E93	WH	MG MESH CNTL - Second Gear
488	WH	Air SW To Air SW Jumper	E94	BU	MG MESH CNTL - Third Gear
492	YL	Articulation Indicator	E94	YL	MG MESH CNTL - Fourth Gear
046	GN	Transmission Temperature SW	E94	GN	MG MESH CNTL - Fifth Gear
Accessory Circuits					
500	BR	Wiper - Front (Park)	E94	GY	MG MESH CNTL - Seventh Gear
501	GN	Wiper - Front (Low)	E94	PU	MG MESH CNTL - Eighth Gear
502	OR	Wiper - Front (Hi)	E94	OR	MG MESH CNTL - Forward Direct
503	BR	Wiper - Rear (Park)	E94	WH	MG MESH CNTL - Reverse Direct
504	YL	Wiper - Rear (Low)	E94	YL	MG MESH CNTL - Park
505	BU	Wiper - Rear (Hi)	E94	YL	MG MESH CNTL - Neutral
			E97	PU	MESH Lamp

Component Location						
Component	Schematic Location	Machine Location	Component	Schematic Location	Machine Location	
Air Dryer	F-15	31	Sender - Fuel Level	A-13	25	
Alarm - Action	B-4	C	Sender - Transmission Speed	B-15	28	
Alarm - Backup	E-15	1	Sensor - Engine Speed	B-14	26	
Alternator	D-14	2	Solenoid - A/C Clutch	A-13	22	
Battery	C-14	5.6	Solenoid - Centershift	B-3	29	
Beacon	A-12	7	Solenoid - Differential Lock	E-14	4	
Breaker - Alternator	D-13	8	Solenoid - Dual Horsepower	A-13	22	
Breaker - Cab Flood Lamp	D-10	B	Solenoid - Engine Shutdown	D-13	22	
Breaker - Converter	F-12	13	Solenoid - Forward Horn	F-3	10	
Breaker - Headlamp and Right Tail Pos	D-10	B	Solenoid - Park Brake	B-12	10	
Breaker - Left Tail Lamp	D-10	B	Solenoid - Start Aid	A-13	25	
Blade - Neutral Start	C-13	5	Solenoids - Brake Cushion	E-2	30	
Control - Neutral Start	A-5	10	Solenoids - Transmission Valve (B)	D-15	31	
Control - Secondary Steer	E-14	9	Speedometer	F-5	4	
Control - Transmission	A-7	11	Switch - A/C Refrigeration	A-13	22	
Converter-Voltage	F-11	12	Switch - Air Inlet Heater	B-8	C	
Converter-Voltage	F-13	13	Switch - Beacon	B-6	C	
Electronic Monitoring System(EMS)	E-4	A	Switch - Blower (A/C)	B-10	C	
Flasher	D-10	B	Switch - Blower (Heater)	A-10	C	
Fuses	B-6	C	Switch - Brake Air Pressure	A-2	11	
Fuses	D-10	B	Switch - Centershift Indicator	C-3	29	
Fuses	E-11	B	Switch - Centershift Pin	B-9	C	
Switch - Anticollision	F-5	A	Switch - Coolant Temp (Monitor)	B-14	24	
Gauge - Coolant Temperature	F-5	A	Switch - Coolant Temp (Start Aid)	A-14	24	
Gauge - Fuel Level	E-5	A	Switch - Cushion Blade	B-9	C	
Ground - Cab Frame to Front Frame	C-5	17	Switch - Defroster (Front)	A-5	C	
Ground - Front Frame	D-5	39	Switch - Defroster (Rear)	B-5	C	
Ground Strap - Rear Frame to Front Frame	C-12	23	Switch - Differential Lock	D-8	B	
Heater-Air Intake	B-15	31	Switch - Disconnect	C-14	6	
Meter - Service	E-10	B	Switch - EMS Test	E-8	B	
Motor - Blower (A/C group)	B-10	14	Switch - Engine Oil Pressure	C-13	32	
Motor - Blower (Heater group)	A-10	E	Switch - Flood Lamps	D-9	B	
Motor-Defroster	A-12, E-4	15	Switch-Forward Horn	E-10	B	
Motor-Secondary Steer	F-4	20	Switch-Fuel Pressure	B-13	24	
Motor-Steer	C-13	19	Switch - Head/Tail Lamp	E-8	B	
Motor - Washer (Front Lower)	B-6	16	Switch - Headlamp Dimmer	E-9	B	
Motor - Washer (Front Upper)	C-8	16	Switch - Hydraulic Oil Temperature	C-11	33	
Motor - Washer (Rear)	F-6	16	Switch - Inching Pedal Pressure	C-15	31	
Motor - Wiper (Front Lower)	C-4	17	Switch - Key Start	B-9	C	
Motor - Wiper (Front Upper)	D-4	17	Switch - Panel Lamp Dimmer	E-10	B	
Motor - Wiper (Rear)	B-11	18	Switch - Park Brake Pressure	B-11	34	
Relay - A/H	B-15	31	Switch - Primary Steer	F-12	35	
Relay - Cab Flood Lamp	E-10	B	Switch - Rear Flood Lamp	D-8	B	
Relay - Flood/Tail Lamp	D-8	B	Switch - Secondary Steer Test	B-8	C	
Relay - Left Tail Lamp	E-4	B	Switch - Start Aid/Meter Test	B	E-11	B
Relay - Main	D-14	8	Switch - Stoplamp Pressure	A-2	11	
Relay - Right Tail Lamp	E-8	B	Switch - Transmission Direction & Speed	A-9	C	
Relay - Secondary Steer	F-14	22	Switch - Transmission Oil Temp	C-15	31	
Relay - Start	D-13	8	Switch - Turn Signal	E-10	10	
Resistor - Blower Speed	E	A-11, E-4	E	Switch - Wiper (Front Lower)	A-4	6
Resistor - Blower Speed (A/C)	B-11	15	Switch - Wiper (Front Upper)	B-4	5	
Resistor - Blower Speed (Heater)	A-11	E	Switch - Wiper (Rear)	A-4	C	
Resistor - Panel Lamp Dimmer	E-10	B	Tachometer			
Resistor - Starting/Charging Diagnostic	C-14	19	Thermoswitch (A/C)			
Sender-Anticollision	C-12	23	Timer-A/H			
Sender-Coolant Temp	A-14	24				

Machine locations are repeated for components located close together.
 A = Operator's compartment (Dash).
 B = Operator's compartment (Observing console).
 C = Operator's compartment (Right side console).
 D = Operator's compartment (Headliner).
 E = Operator's compartment (Under seat).

Off Machine Switch Specification					
Part No.	Function	Adjustable	Deductible	Contact Position	Code
2M-0346	Stop Lamp Pressure	45 kPa (6.5 psi)	100.0 ± 5.4 kPa MIN (14.7 ± 0.8 MPa MIN)	Normally Open	
3E-2033	Bake/Park Brake Air Pressure	92.0 kPa MAX (13.3 ± 0.6 MPa)	100.0 ± 5.4 kPa (14.7 ± 0.8 MPa)	Normally Open	
8C-3569	Coolant Temperature	38.00 ± 0.03 °C (92.00 ± 0.05 °F)	27.0 °C MIN (80.6 °F MIN)	Normally Closed	
8N-2248	Hydraulic Oil Temperature	100.4 ± 5.4 °C MIN (212.7 ± 0.8 °F MIN)	93.3 °C MIN (200 °F MIN)	Normally Closed	
8T-8640	Steering Pressure	1200.0 kPa MAX (174.0 ± 0.8 MPa)	700.0 ± 103 kPa (10.1 ± 15.0 MPa)	1-2 Normally Open 1-3 Normally Closed	
8T-9793	Coolant Temperature	107.0 ± 3.0 °C (224.6 ± 5.4 °F)	93.00 °C (199.4 °F)	Normally Closed	
9X-0378	Engine Oil Pressure	62.0 kPa MAX (9.00 psi MAX)	39 ± 20 kPa (5.6 ± 3.0 psi)	Normally Open	
111-9799	Spring Position	75.0 kPa MAX (10.9 psi MAX)	50.0 kPa MIN (7.30 psi MIN)	Normally Open	
114-5334	Refrigerant Pressure	275 to 1750 kPa* (40 to 255 psi)	-	Normally Open*	
15-7103	Fuel Pressure	93.0 ± 21 kPa (13.5 ± 3.0 psi)	69 ± 21 kPa (10 ± 3.0 psi)	Normally Closed	

*Hydraulic band exists; when 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 970 kpa (25psi).

* Contact position at the contacts of the harness connector.

Resistor, Sender and Solenoid Specifications			
Part No.	Component Description	Resistance (Ohms)†	
3E-3883	Sender - Anticollision	3 ± 0.97	
3T-3123	Resistor - Panel Dimmer	25.0 ± 1.3	
4W-8922	Sender - Coolant Temperature	560 to 716 @ 54°C (130°F) 72 to 82 @ 110°C (230°F)	
6T-2217	Resistor - Starting/Charging Diagnostic	150 ± 7.5	
6T-4003	Resistor - Power	10.0 ± 0.5	
7T-9073	Solenoid - Differential Lock	33.6 ± 1.0	
7T-9074	Solenoid - Forward Horn/Park Brake	55.17 ± 5.77	
8C-3663	Solenoid - Engine Shutdown	1.55 ± 0.15	
	Start (Latching) Coil	10.3 ± 1.03	
	Stop (Unlatching) Coil	34.3 ± 1.7	
8T-8808	Solenoid - Centershift	34.3 ± 1.7	
9C-1950	Resistor - Blower Speed	Overall 2.00 ± 0.10 Tap 1.00 ± 0.05	
9C-4365	Solenoid - Start Aid	6.0	
101-7759	Solenoid - A/C Clutch	14.4 ± 0.8	
104-0387	Sender - Transmission Speed	1000 ± 1200	
111-0570	Solenoid - Dual HP	31.1 ± 2.4	
127-0574	Solenoids - Transmission	31.0 ± 3.0	

† At room temperature.



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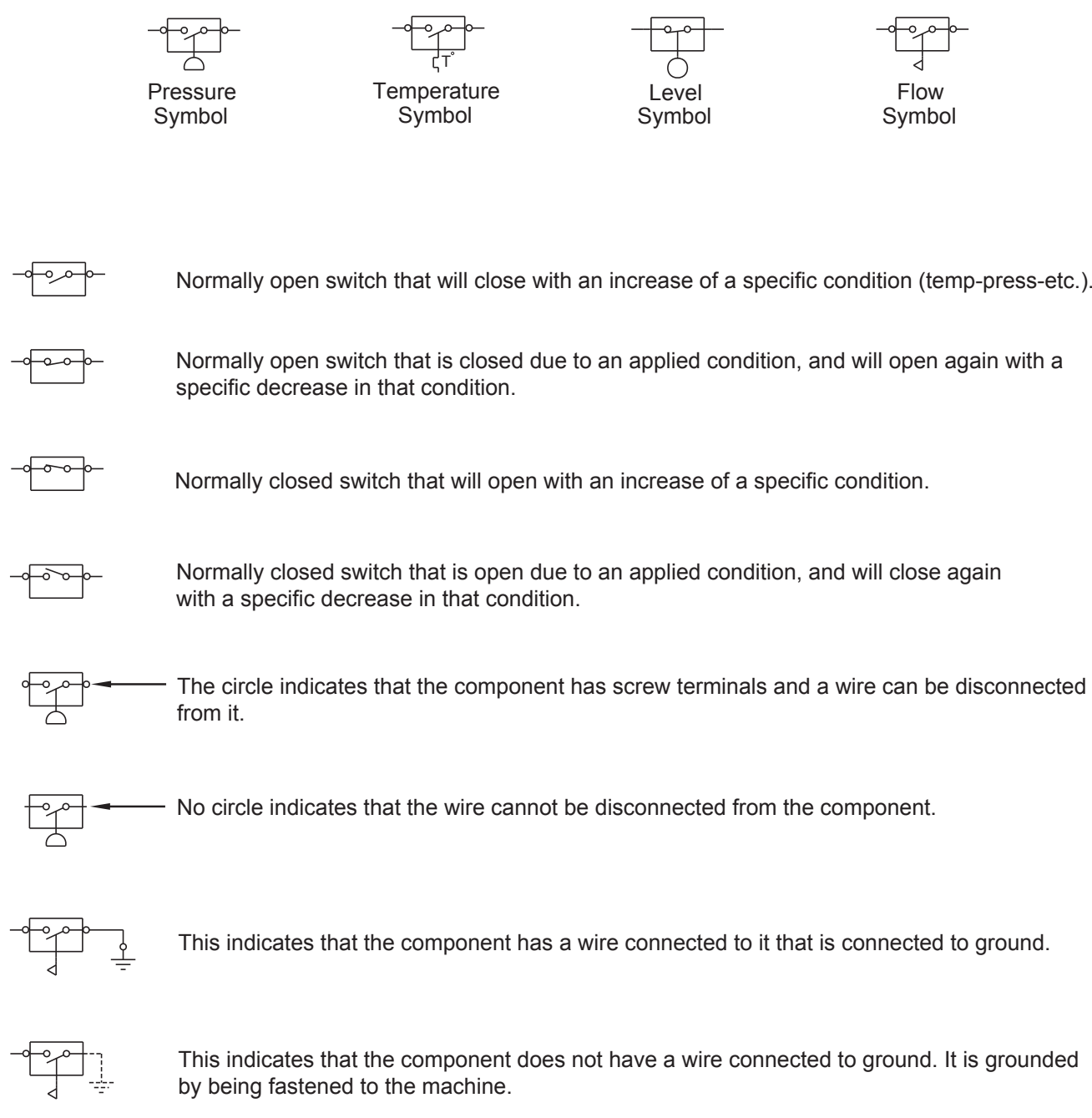
Schematic

120H Motor Grader (ES Version) Electrical System

120H:
6NM1-254
9YR1-329



Electrical Schematic Symbols And Definitions



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Related Electrical Service Manuals		
Title	Form Number	
Alternator: 100-5047 (5		

