CATERPILLAR®

UENR1735
June 2011

Schematic

735B and 740B Articulated Truck
740B Ejector Articulated Truck
Electrical System

735B:	740B:	740B EJ:
L4D1-UP	L4E1-UP	L4F1-UP
T4P1-UP	T4R1-UP	T4S1-UP

Volume 1 of 2: Chassis

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42 Page, (Dimensions: 56 inches x 35 inches)

Component Location

Component	Schematic Location	Machine Location	Component	Schematic Location	Machine Location
Actuator - ARD Air Flow Control	D-3	1	Sensor - Engine Speed #2 (Cam) (T4P, T4R, T4S)	H-11	85
Actuator - ARD Fuel Pressure #1 Cont	C-2	2	Sensor - Engine Speed #2 (Cam) (L4D, L4E, L4F)	F-10	86
Actuator - ARD Fuel Pressure #2 Cont	B-2	3	Sensor - Front Left Hand Wheel Speed	C-17	87
Alarm - Backup	K-18	4	Sensor - Front Right Hand Wheel Speed	C-17	88
Alternator (L4D, L4E, L4F)	I-5	5	Sensor - Fuel Pressure After Filter (T4P, T4R, T4S)	G-10	89
Battery A	I-4	6	Sensor - Fuel Pressure After Filter (L4D, L4E, L4F)	D-9	90
Battery B	I-4	7	Sensor - Fuel Temp (T4P, T4R, T4S)	G-10	91
Breaker - Alternator (L4D, L4E, L4F)	J-4	8	Sensor - Fuel Temp (L4D, L4E, L4F)	D-9	92
Breaker - CCEM Fan	J-4	9	Sensor - Hydraulic Oil Temp	L-4	93
Breaker - Engine ECM	J-4	10	Sensor - IAD ACC Pressure	B-16	94
Breaker - Main	J-4	11	Sensor - Intake Manifold Pressure (IMP) (T4P, T4R, T4S)	H-11	95
Breaker - Main 2	J-4	12	Sensor - Intake Manifold Pressure (L4D, L4E, L4F)	E-10	96
Bus Bar	I-4	13	Sensor - Intake Manifold Temp (L4D, L4E, L4F)	E-10	97
Camera	J-18	14	Sensor - Intermediate Speed	G-16	98
Camera 1	L-17	15	Sensor - Low Oil Pressure	A-17	99
Coil - ARD Ignition Xformer Primary	B-2	16	Sensor - Mid Left Hand Wheel Speed	F-18	100
Compressor - A/C Clutch Coil 1	H-1	17	Sensor - Mid Right Hand Wheel Speed	F-18	101
Control - Air Cooled (T4P, T4R, T4S)	L-13	18	Sensor - NRS Differential Pressure (T4P, T4R, T4S)	H-11	102
Control - Air Cooled (L4D, L4E, L4F)	F-12	19	Sensor - NRS Intake Pressure (T4P, T4R, T4S)	H-11	103
Control - CCEM Fan	G-4	20	Sensor - NRS Temp (T4P, T4R, T4S)	J-10	104
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Ground - Cab	A-9	22	Sensor - Parking Brake Pressure	H-18	106
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Heater - ARD Fuel Nozzle	B-4	28	Sensor - TC Oil Temp	C-6	112
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Horn - Low Tone	G-3	30	Sensor - Transmission Out Speed A	H-16	114
Injector 1 (T4P, T4R, T4S)	I-9	31	Sensor - Transmission Out Speed B	H-16	115
Injector 1 (L4D, L4E, L4F)	F-8	32	Sensor - Transmission T/C Output Speed	F-17	116
Injector 2 (T4P, T4R, T4S)	I-9	33	Solenoid - ATAAC Demand Fan	H-7	117
Injector 2 (L4D, L4E, L4F)	F-8	34	Solenoid - Demand Fan 1	A-16	118
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Injector 6 (L4D, L4E, L4F)	F-8	42	Solenoid - Mid XAD 1	J-17	126
Module - Aftertreatment #1 ID	C-2	43	Solenoid - NRS Flow Bal Valve Actuator Up (T4P, T4R, T4S)	I-11	127
Motor - Electric Fuel Pump (L4D, L4E, L4F)	G-1	44	Solenoid - NRS Valve Actuator (T4P, T4R, T4S)	J-10	128
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Sensor - Aftertreat Gas DPF In	C-2	59	Solenoid - Raise Valve	H-18	143
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Sensor - Air Inlet Temp Filter	J-6	64	Switch - Auto Lube	G-18	148
Sensor - Air Inlet Temp Filter (L4D, L4E, L4F)	H-1	65	Switch - Auto Lube 1	K-17	149
Sensor - ARD Fuel Pressure #1 (Pilot)	C-2	66	Switch - Disconnect	H-4	150
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Sensor - Barometric Pressure (L4D, L4E, L4F)	E-10	70	Switch - Hydraulic Tank Filter Bypass	L-4	154
Sensor - Body Up	I-18	71	Switch - Manual Fuel Prime	I-6	155
Sensor - Charge Air Cool #1 Out (T4P, T4R, T4S)	I-10	72	Switch - Manual Fuel Prime (L4D, L4E, L4F)	G-1	156
Sensor - Coolant Temp (T4P, T4R, T4S)	G-8	73	Switch - OTG Filter Bypass	B-17	157
Sensor - Coolant Temp (L4D, L4E, L4F)	E-10	74	Switch - OTG Low Oil Pressure	A-17	158
Sensor - Cooling Fan Speed	A-17	75	Switch - Rear Brake Temp	G-18	159
Sensor - Crankcase Pressure	I-10	76	Switch - Rear Brake Temp 1	K-17	160
Sensor - DPF #1 Intake Temp	C-2	77	Switch - Steering Pressure	F-4	161
Sensor - DPF Delta P	A-2	78	Switch - Steering Tank Filter Bypass	K-4	162
Sensor - DPF Intake Pressure #1	A-2	79	Switch - Transmission Filter Bypass TH38	A-15	163
Sensor - Engine Oil Pressure (T4P, T4R, T4S)	H-11	80	Valve - Brake 1/2 (T4P, T4R, T4S)	H-9	164
Sensor - Engine Oil Pressure (L4D, L4E, L4F)	D-10	81	Valve - Brake 1/2 (L4D, L4E, L4F)	F-8	165
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Sensor - Engine Speed #1 (Crank) (T4P, T4R, T4S)	H-11	83	Valve - Brake 3/4 (L4D, L4E, L4F)	E-8	167
Sensor - Engine Speed #1 (Crank) (L4D, L4E, L4F)	F-10	84	Valve - Brake 5/6 (T4P, T4R, T4S)	G-9	168
			Valve - Brake 5/6 (L4D, L4E, L4F)	E-8	169

Off-Machine Switch Specification

Part No.	Function	Actuate	Deactuate	Contact Position
114-5333	AC High/Low Pressure	275 to 1750 kPa[1] (39.9 to 253.8 psi)	- -	Normally Open[2]
227-6745	OTG Filter Bypass	293 ± 35 kPa 276 ± 28 kPa	179 kPa Min	Normally Closed
253-2673	Hydraulic Tank Filter Bypass	148 ± 28 kPa 138 ± 28 kPa	69 kPa Min	Normally Closed
253-2673	Steering Tank Filter Bypass	148 ± 28 kPa 138 ± 28 kPa	69 kPa Min	Normally Closed
313-5104	Steering Pressure	1200 kPa Max	700 ± 100 kPa	N/O & N/C, SPDT
341-6644	Transmission Filter Bypass TH38	448 ± 55 kPa (65 ± 8 psi)	- -	Normally Closed
369-1487	OTG Low Oil Pressure	113 kPa Max	70 ± 20 kPa	Normally Open

[1] 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 (25 psi).

[2] Contact position at the contacts of the harness connector.

Resistor, Sender and Solenoid Specifications

Part No.	Component Description		Resistance (Ohms)[1]
9X-3506	Resistor	CAN B	120 ± 5%
134-2540	Resistor	CAN A CAN A (LRC) Term (C15)	120 ± 10%
152-8340	Solenoid	Parking Brake	32.6 ± 1.6
152-8340	Solenoid	Parking Brake 1	32.6 ± 1.6
196-2403	Solenoid	Lower Valve	5 ± 0.3
192-6443	Solenoid	Raise Valve	5 ± 0.3
211-2092	Solenoid	ATAAC Demand Fan	Nominal: 7.75 ± 1 Minimum: 5.81 ± 0.3 Maximum: 12.68
239-1134	Solenoid	Start Aid	20
239-1135	Solenoid	Start Aid (LRC)	20
244-3114	Solenoid	Lock Up Clutch	8.7 ± 0.4
244-3114	Solenoid	Transmission Clutch 1 - 7	8.7 ± 0.4
252-6322	Solenoid	Front XAD	8.7 ± 0.4
252-6322	Solenoid	Mid XAD	8.7 ± 0.4
252-6322	Solenoid	Rear XAD	8.7 ± 0.4
252-6323	Solenoid	Mid XAD 1	8.7 ± 0.4
252-6323	Solenoid	Rear XAD 1	8.7 ± 0.5
277-8863	Solenoid	IAD Lock ACC Charge	33.8
279-6530	Solenoid	Demand Fan 1	5
300-3556	Solenoid	Fuel Prime	31.1 ± 2.4
308-1267	Solenoid	IAD Lock	5 ± 0.3
335-3086	Sender	Fuel Level	Full: 239 - 255 Empty: 25-32
342-0636	Solenoid	NRS Valve Actuator (C15)	Nominal: 2.95 ± 0.2 Maximum: 4.73
344-6043	Solenoid	NRS Flow Bal Valve Actuator Up (C15)	235

[1] At room temperature unless otherwise noted.

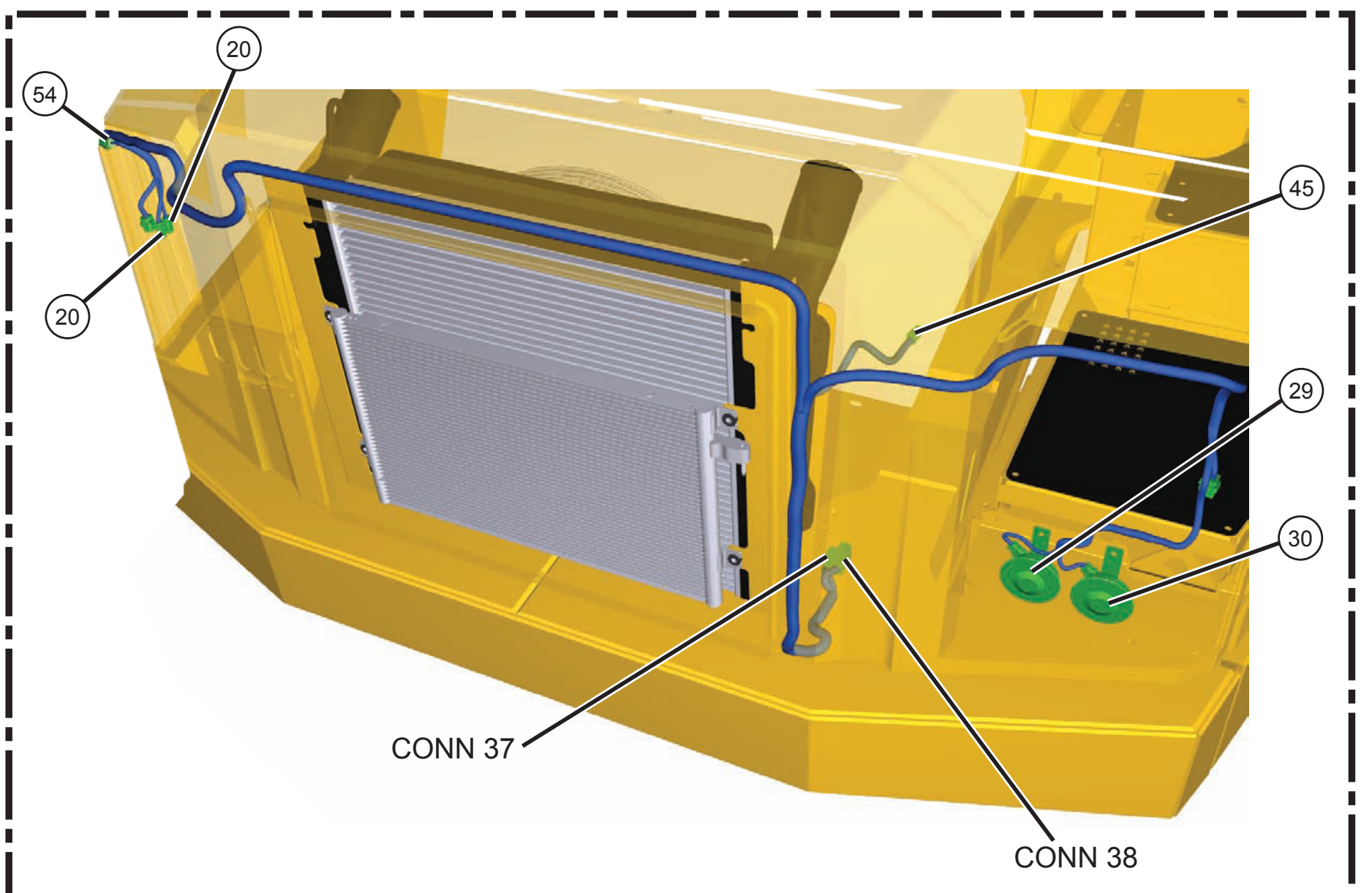
Connector Location

Connector Number	Schematic Location
CONN 1	F-18
CONN 2	F-18
CONN 3	K-18
CONN 4	C-16
CONN 5	C-16/K-15
CONN 6	C-16
CONN 7	D-16/K-15
CONN 8	D-16
CONN 9	F-16
CONN 10	G-15
CONN 11	B-15
CONN 12	A-14
CONN 13	B-14/G-14
CONN 14	E-13
CONN 15	C-13
CONN 16	B-13
CONN 17	A-13
CONN 18	G-12/D-11
CONN 19	G-12/D-11/H-2
CONN 20	I-11/C-4
CONN 21	G-11
CONN 22	F-11/G-10
CONN 23	F-11/A-5

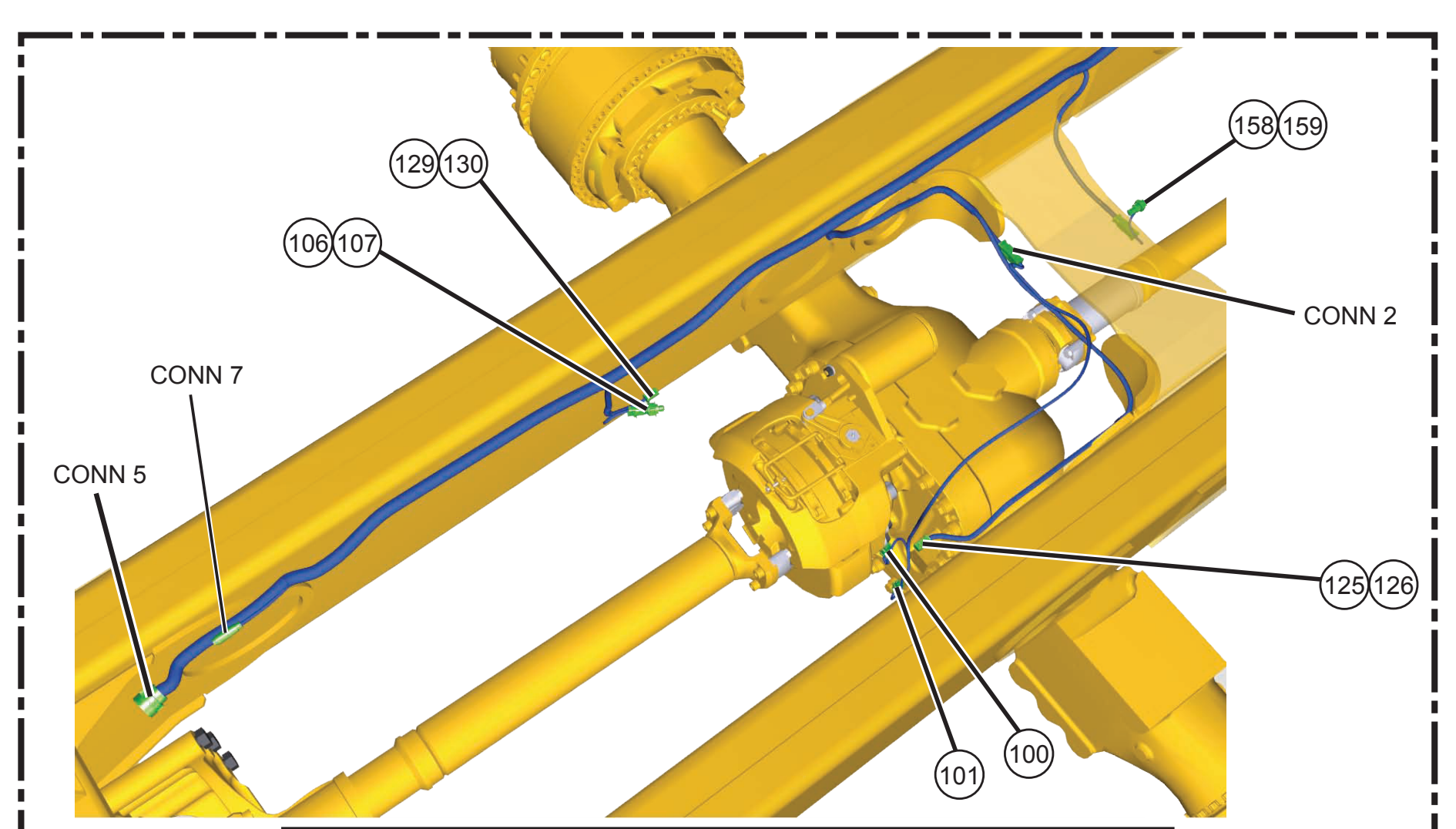
Connector Location

Connector Number	Schematic Location
CONN 24	E-11
CONN 25	D-11
CONN 26	F-10
CONN 27	H-10
CONN 28	I-10
CONN 29	G-9
CONN 30	A-8
CONN 31	C-8
CONN 32	D-8
CONN 33	E-8
CONN 34	I-7/G-2
CONN 35	H-7
CONN 36	A-6
CONN 37	F-6
CONN 38	G-6
CONN 39	J-6
CONN 40	K-6
CONN 41	K-6
CONN 42	F-5
CONN 43	A-4
CONN 44	K-3
CONN 45	F-3

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.



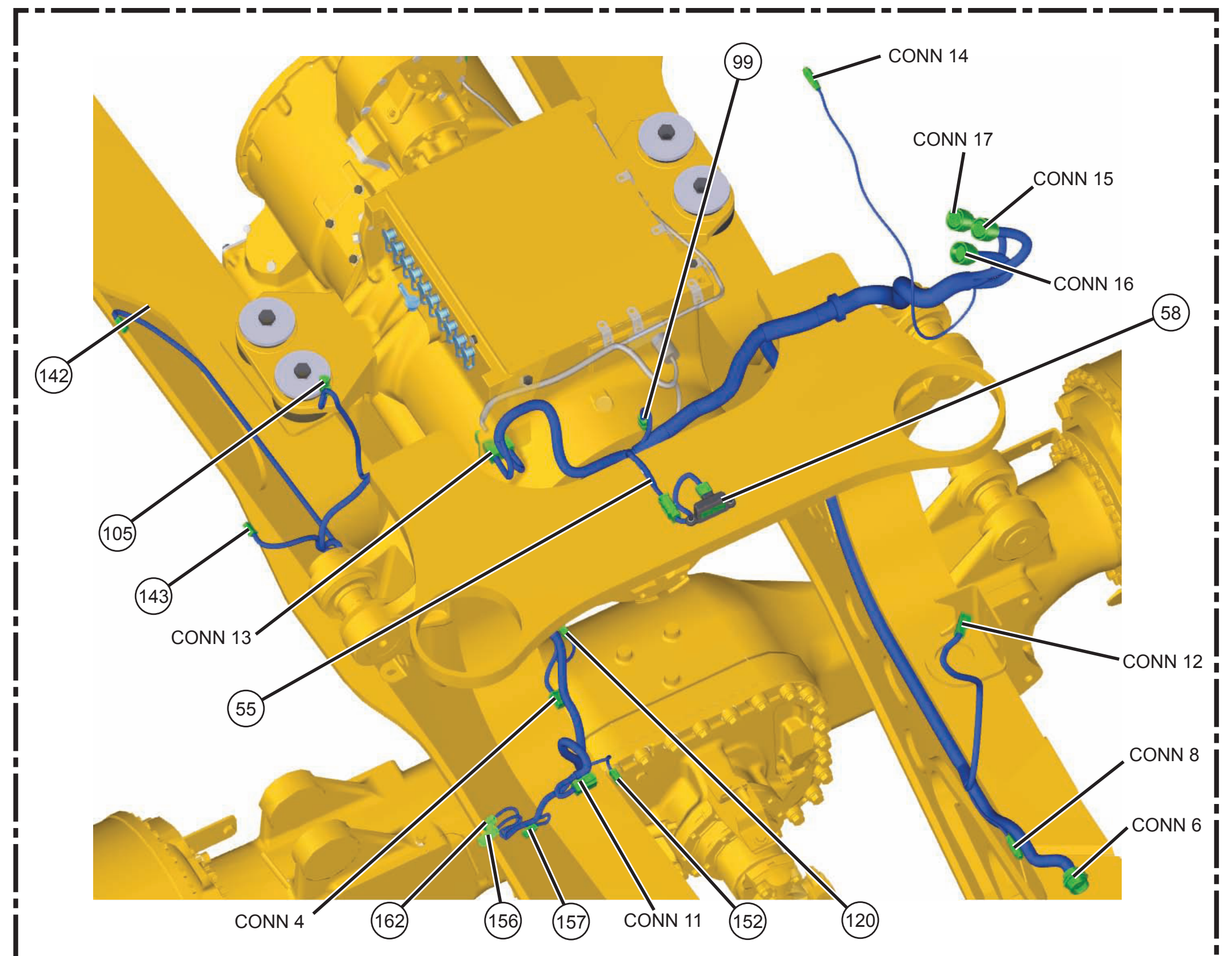
HOOD HARNESS



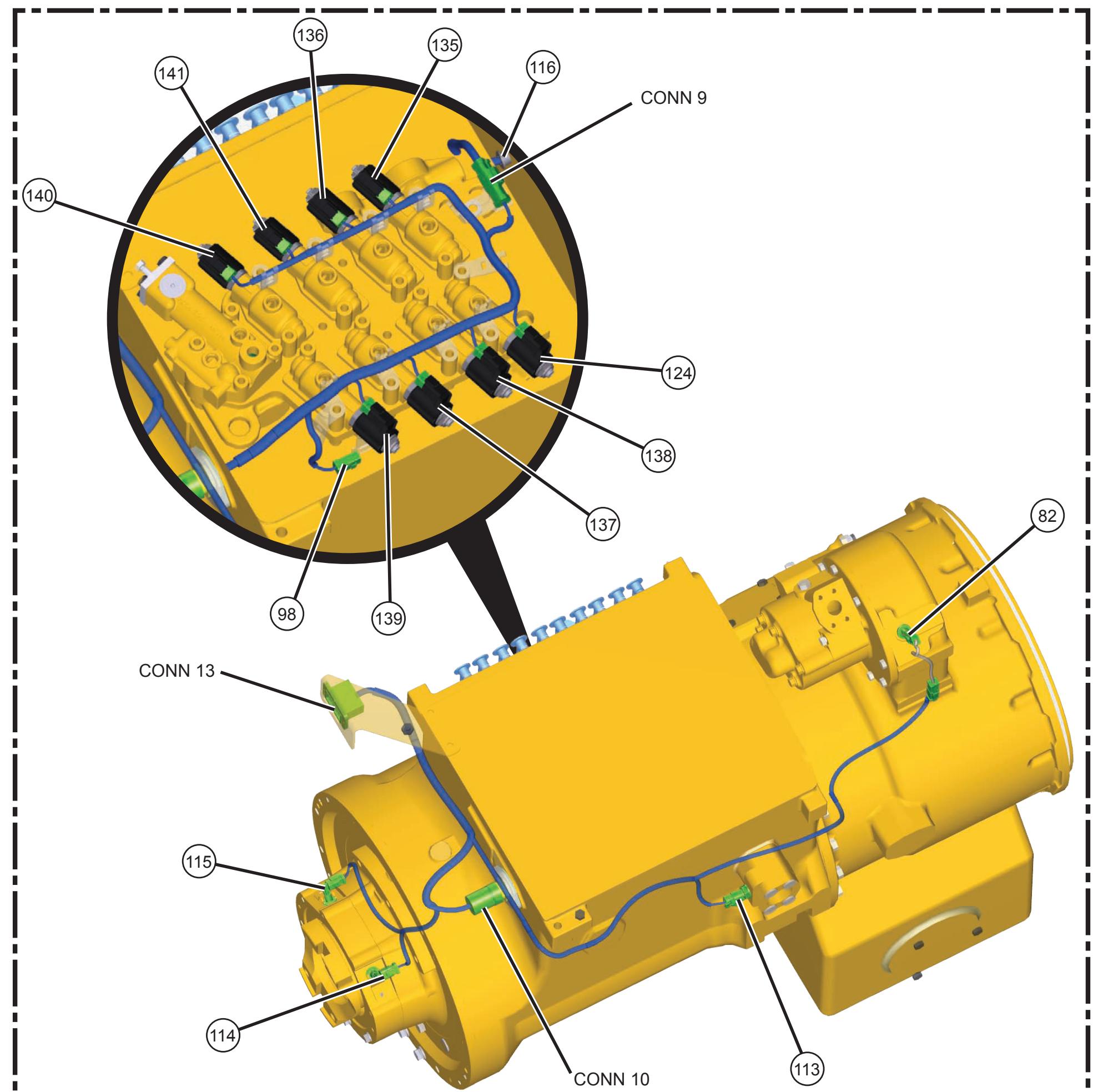
REAR CHASSIS AND MID AXLE HARNESS

Related Electrical Service Manuals

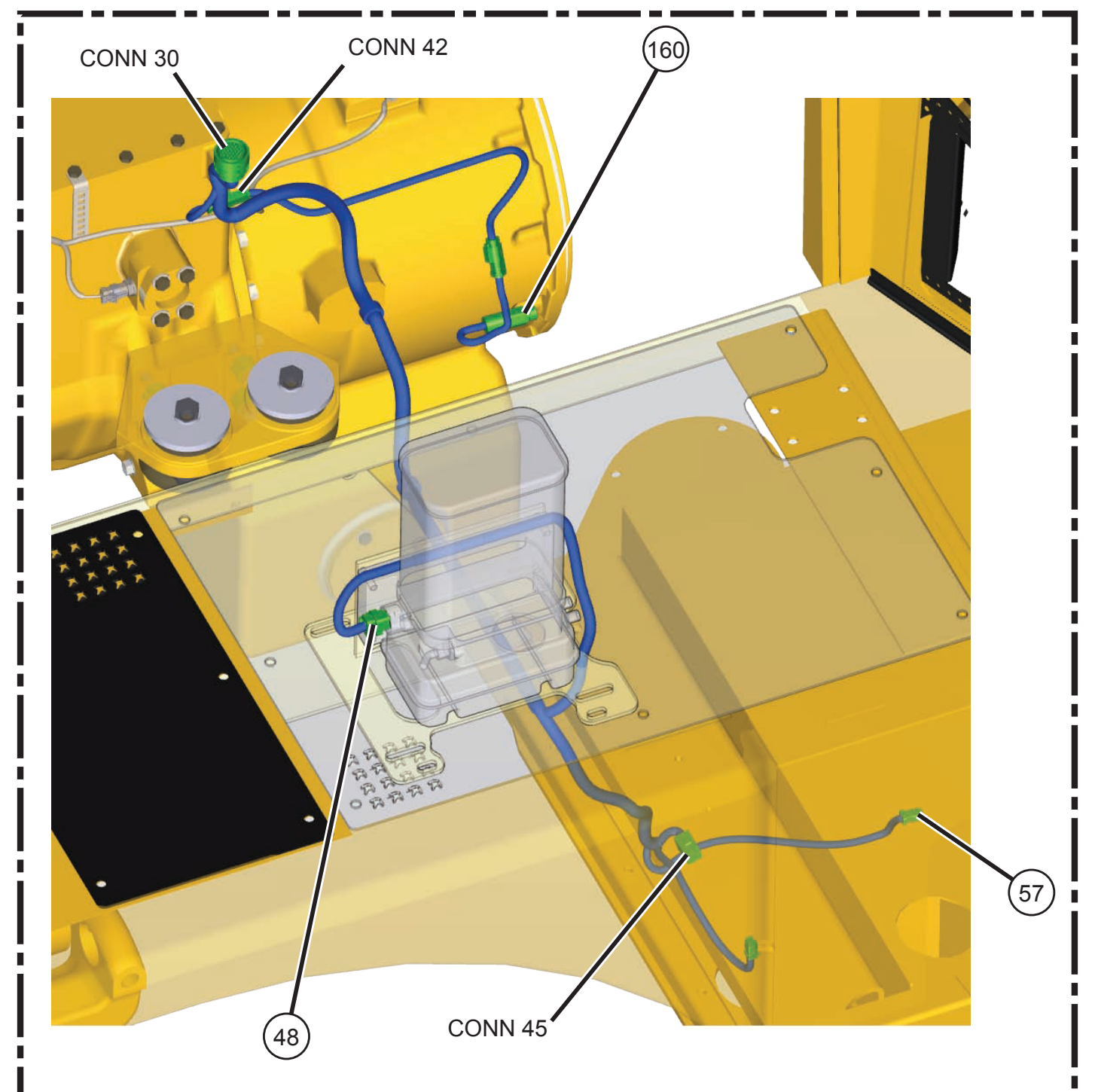
Title		Form Number
Alternator:	272-1889	SENR4130
Starting Motor:	338-3454	SENR3860
Chassis Control:	304-5687	UENR0206
Transmission Control:	304-5687	UENR1226
Communication Gateway Control:	327-6002	UENR1227



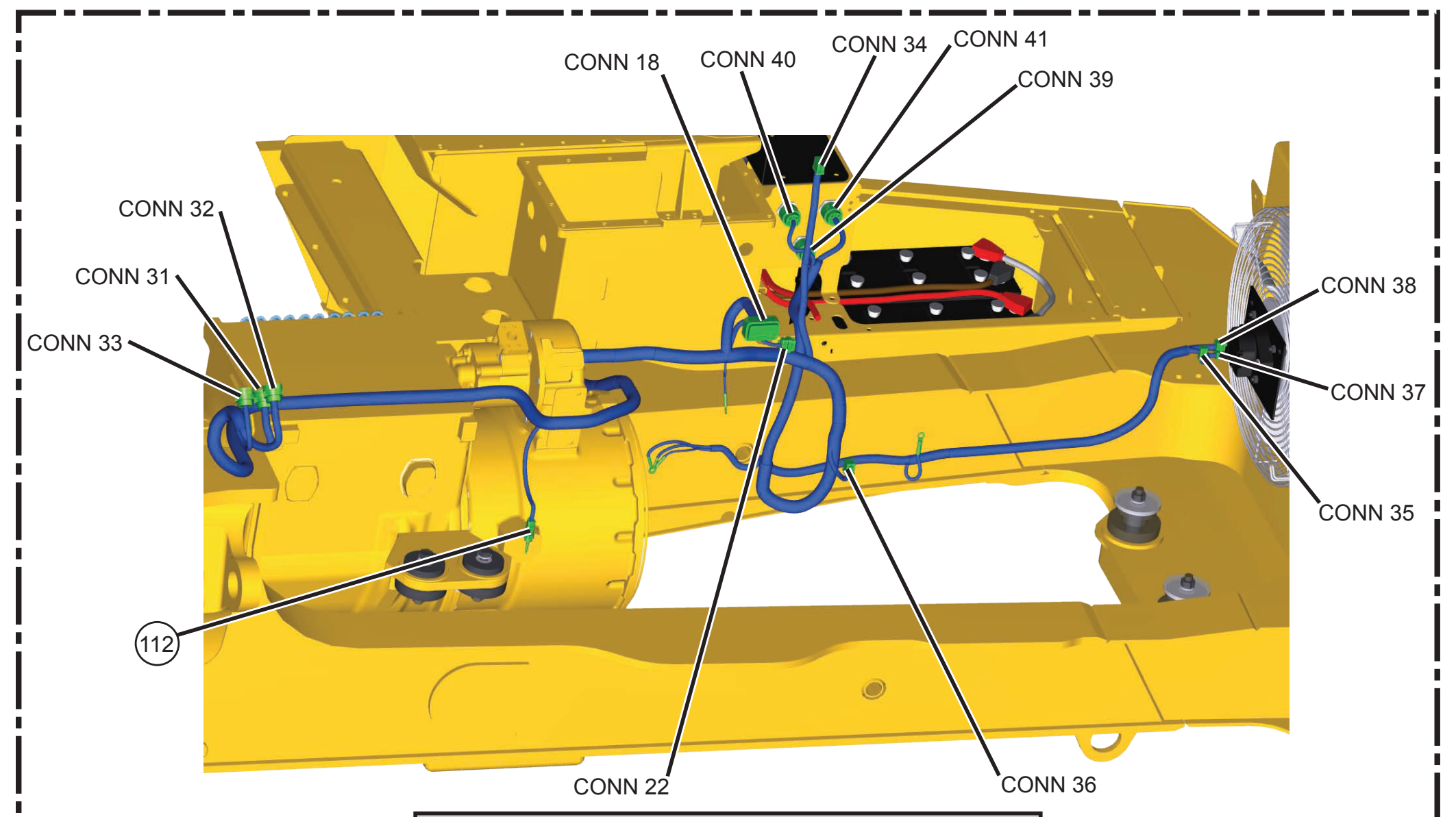
TRANSMISSION HARNESS



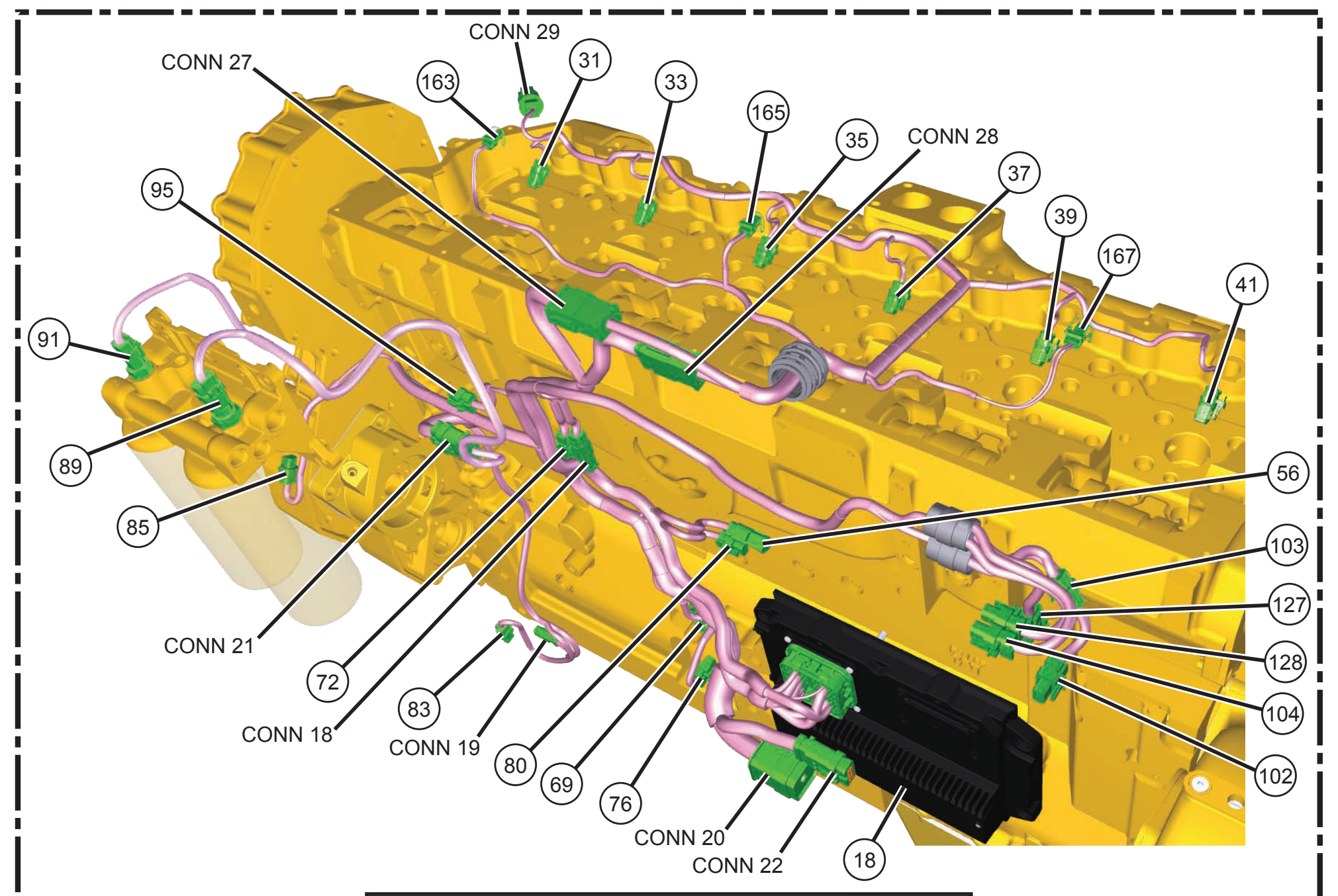
ECPC TRANSMISSION HARNESS



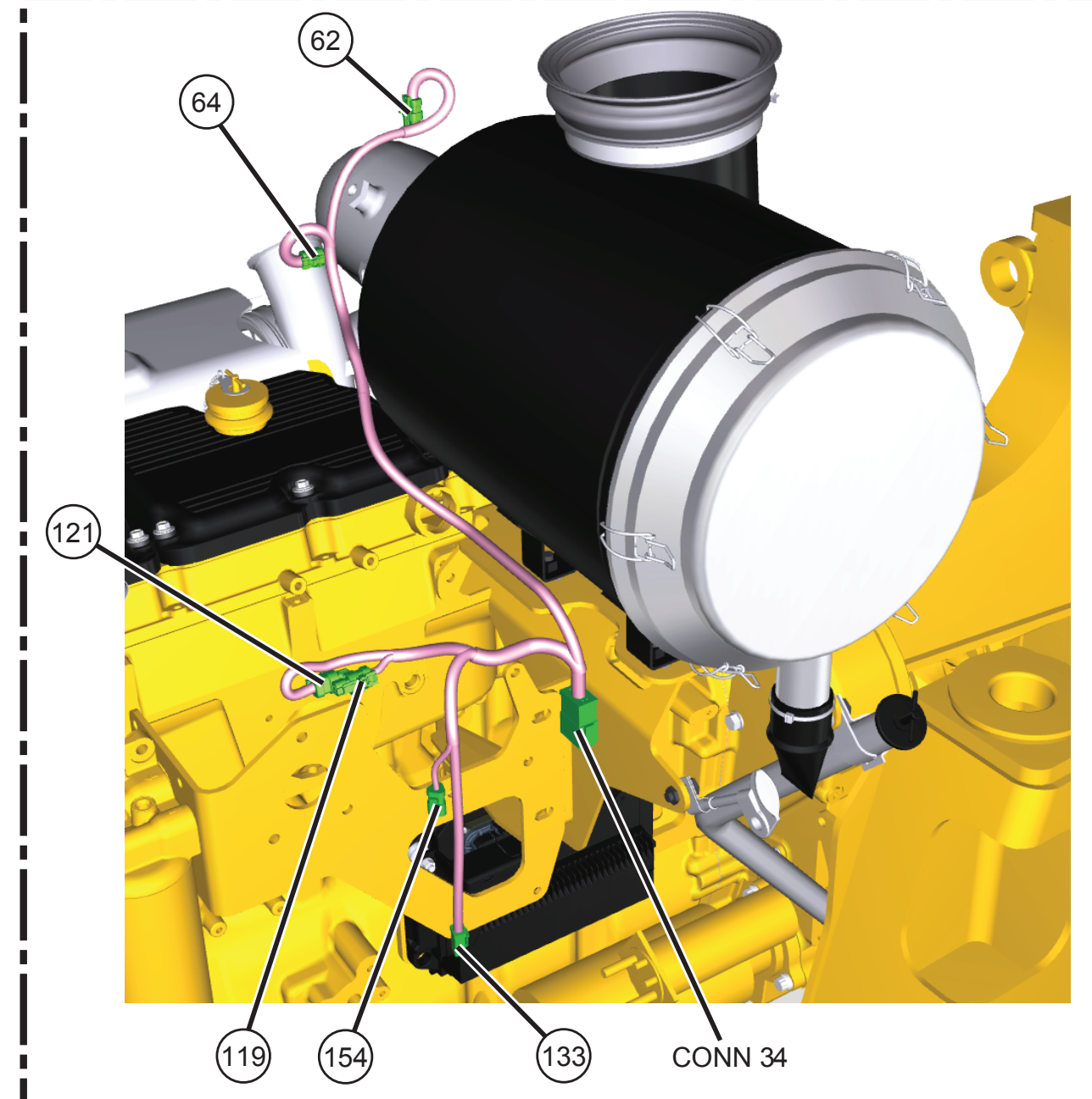
FENDER HARNESS



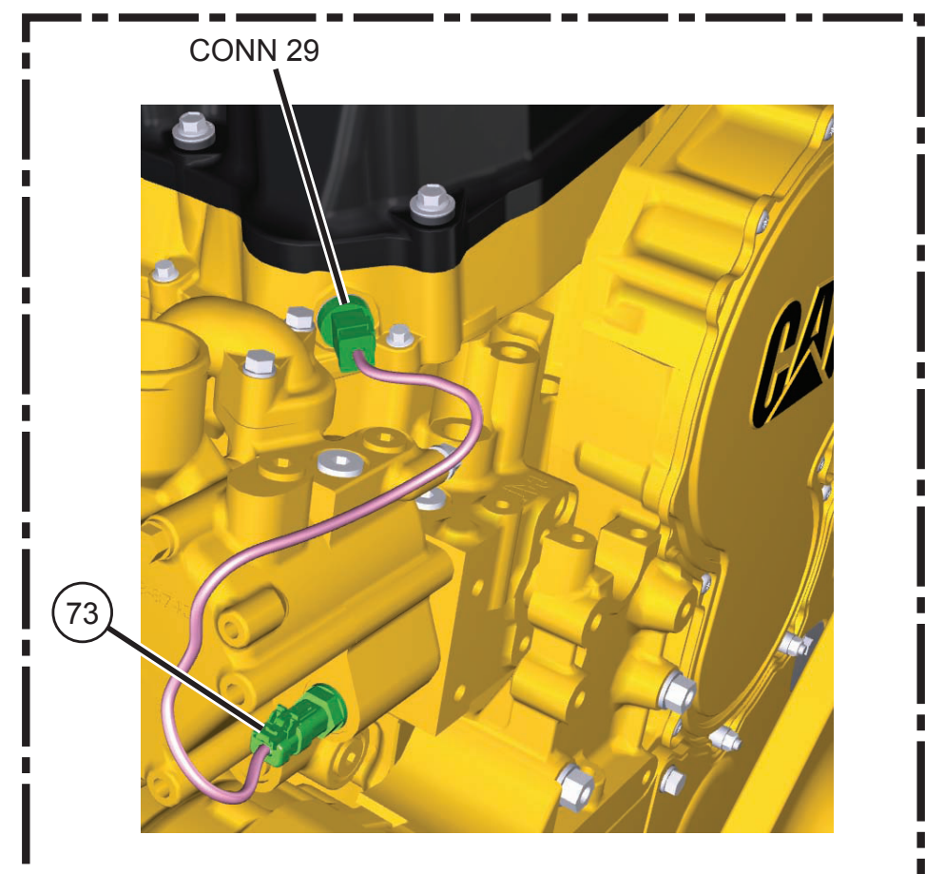
FRONT CHASSIS HARNESS



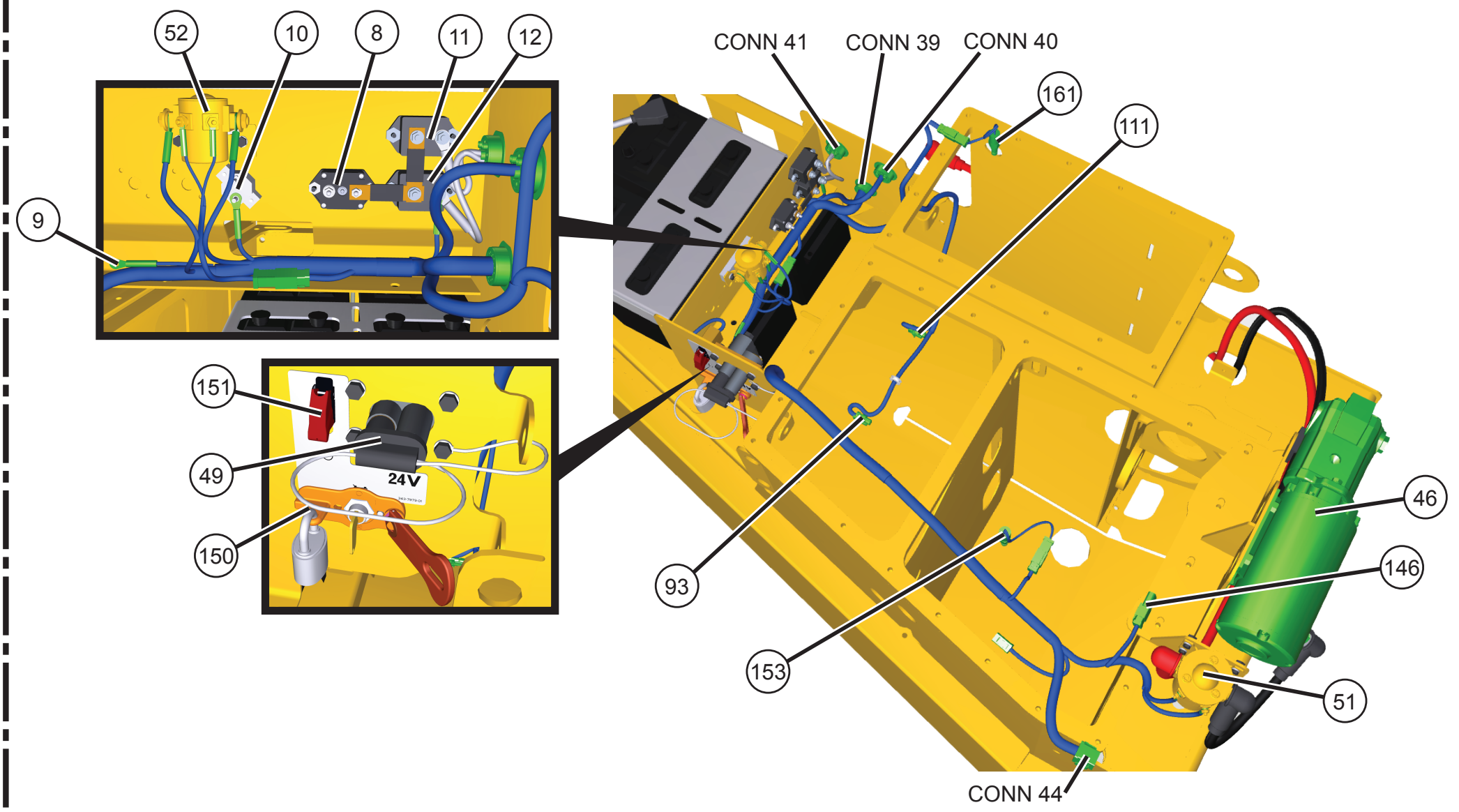
T4P, T4R, T4S ENGINE HARNESS



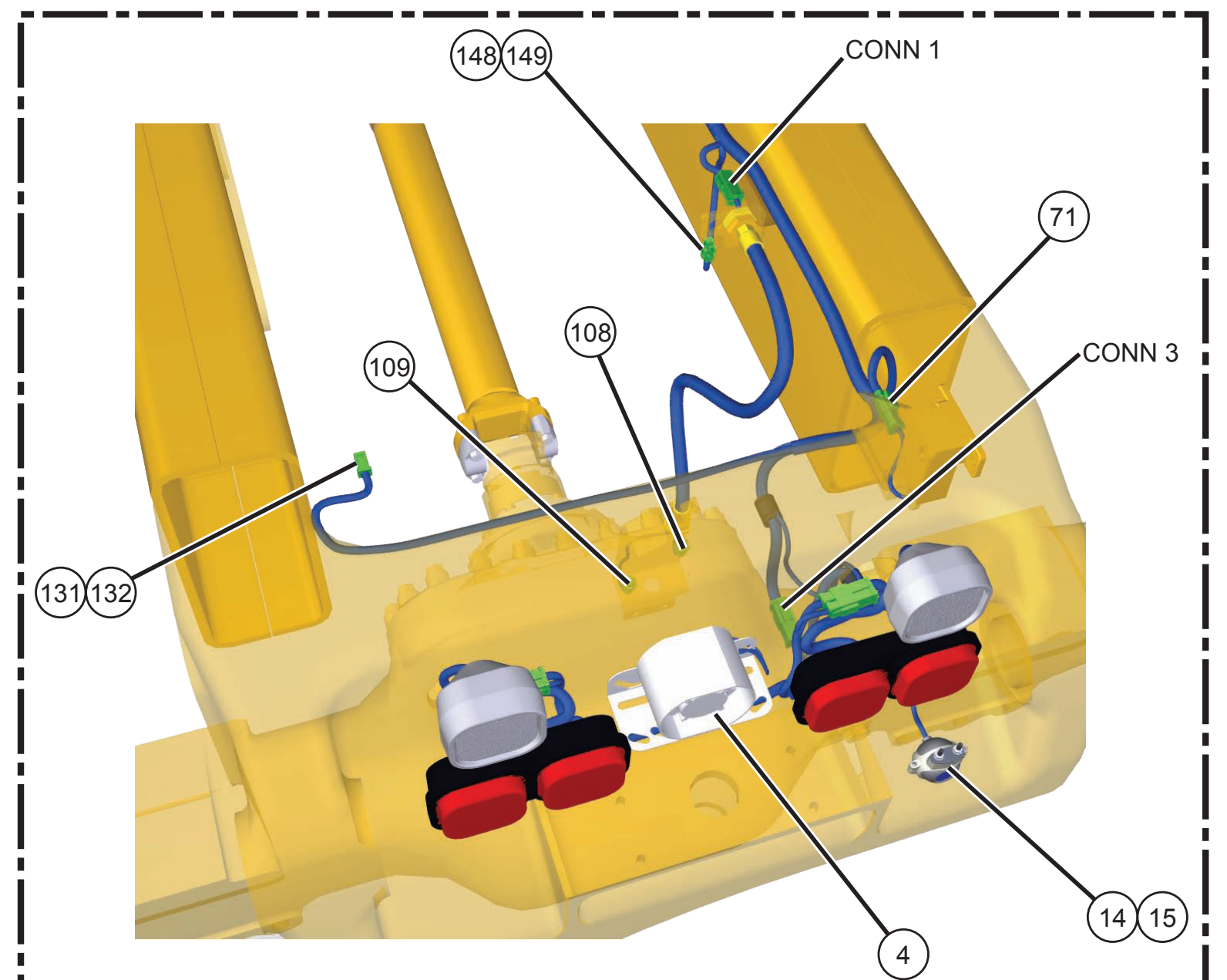
AIR CLEANER HARNESS (T4P, T4R, T4S)



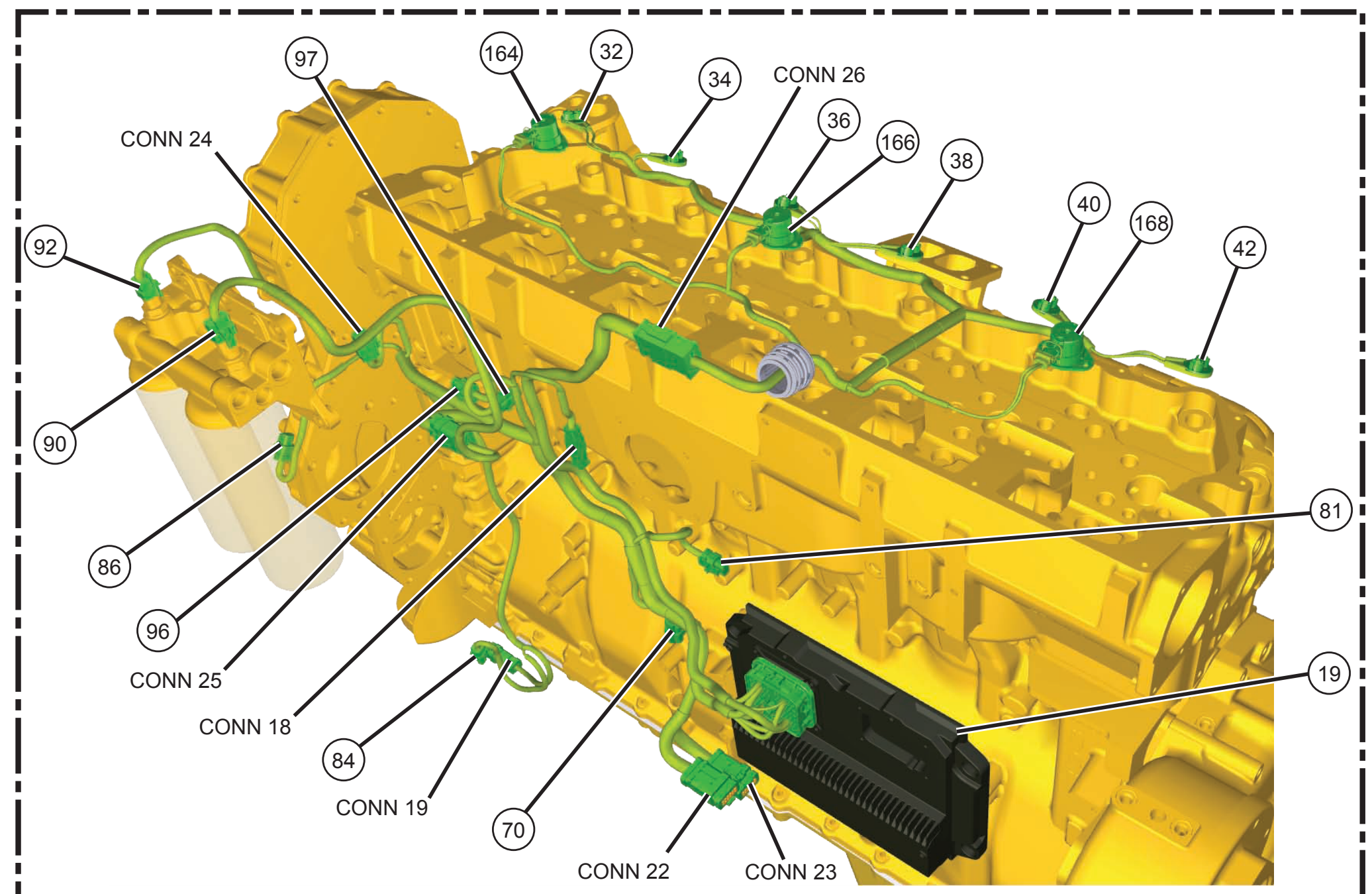
COOLANT JUMPER HARNESS (T4P, T4R, T4S)



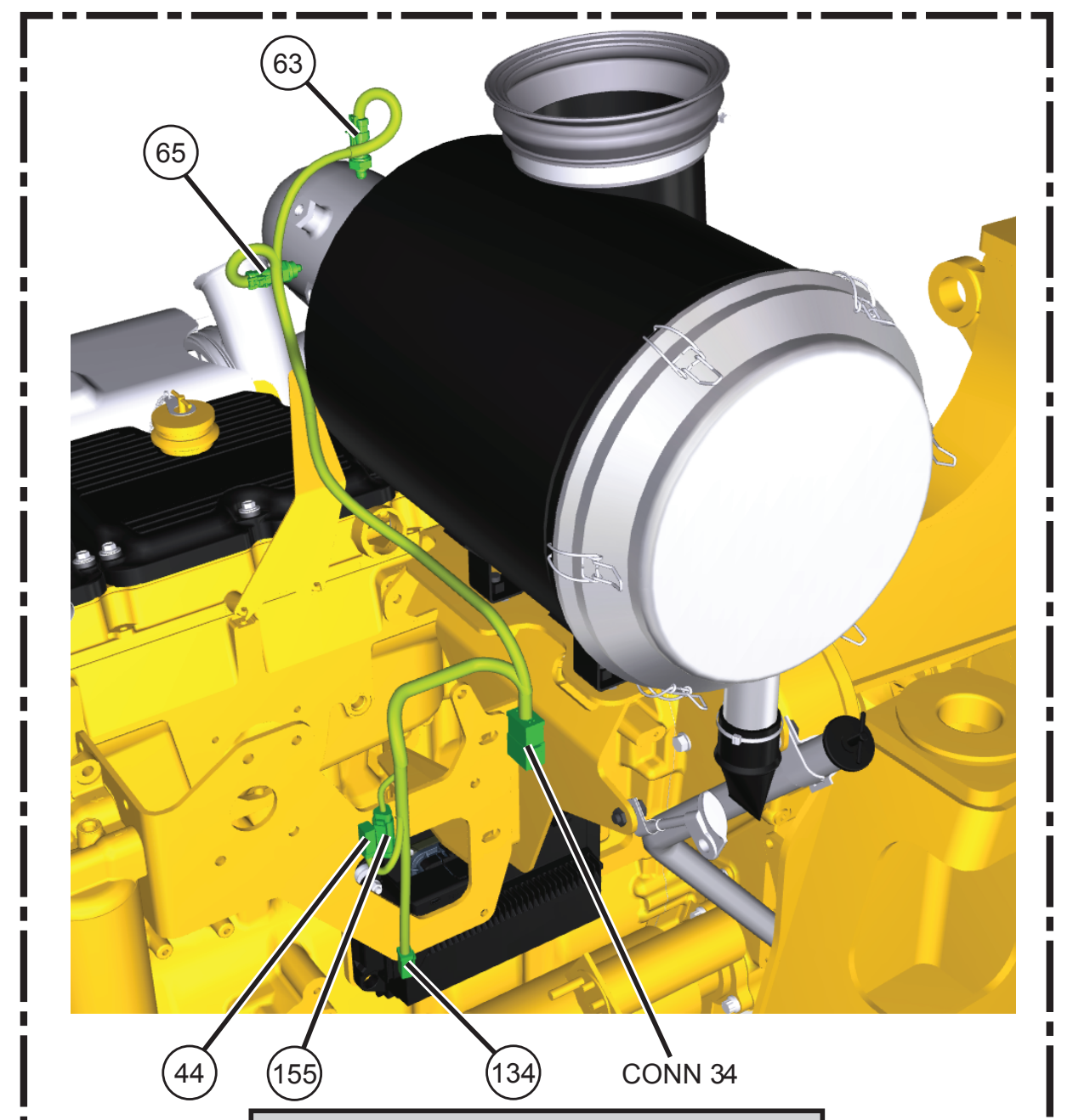
FRONT CHASSIS BREAKER HARNESS



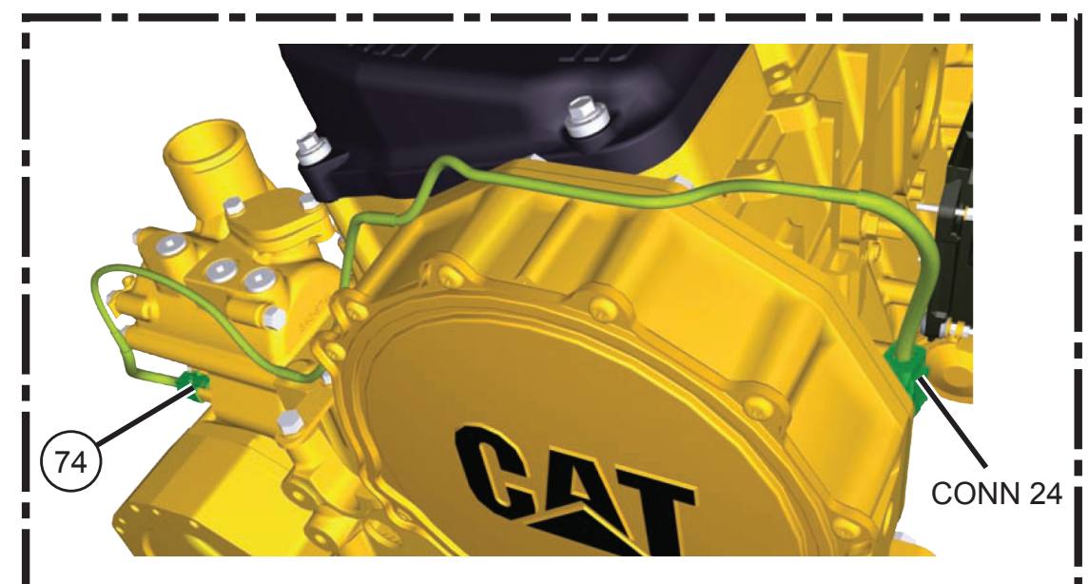
REAR CHASSIS AND REAR AXLE HARNESS



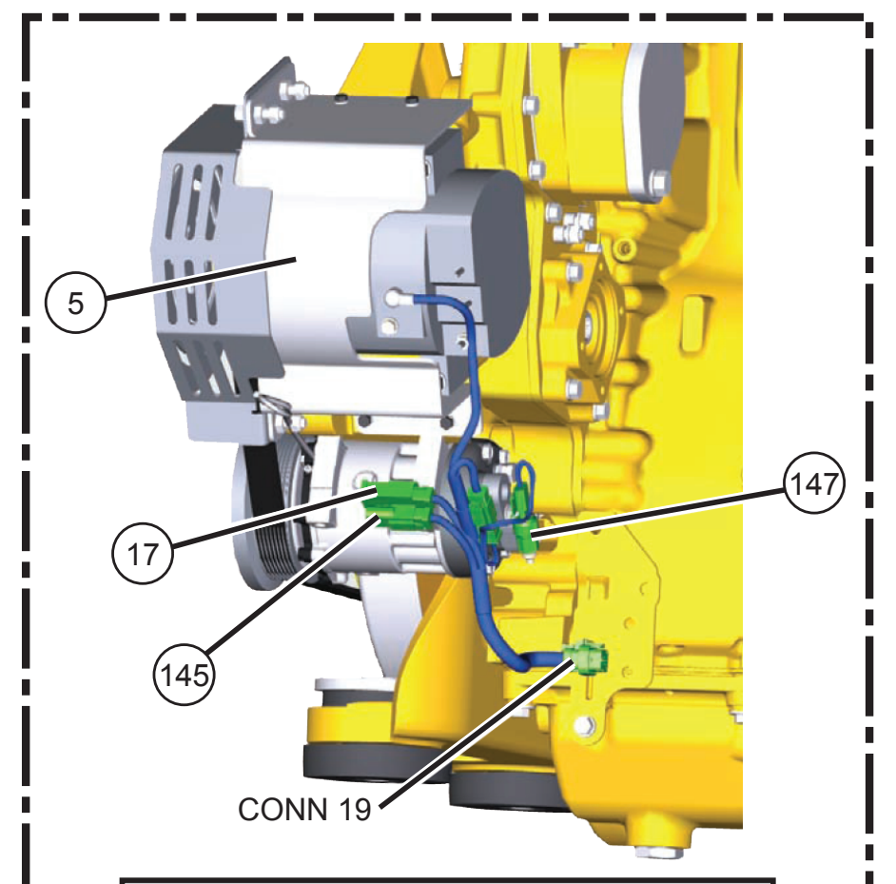
L4D, L4E, L4F ENGINE HARNESS



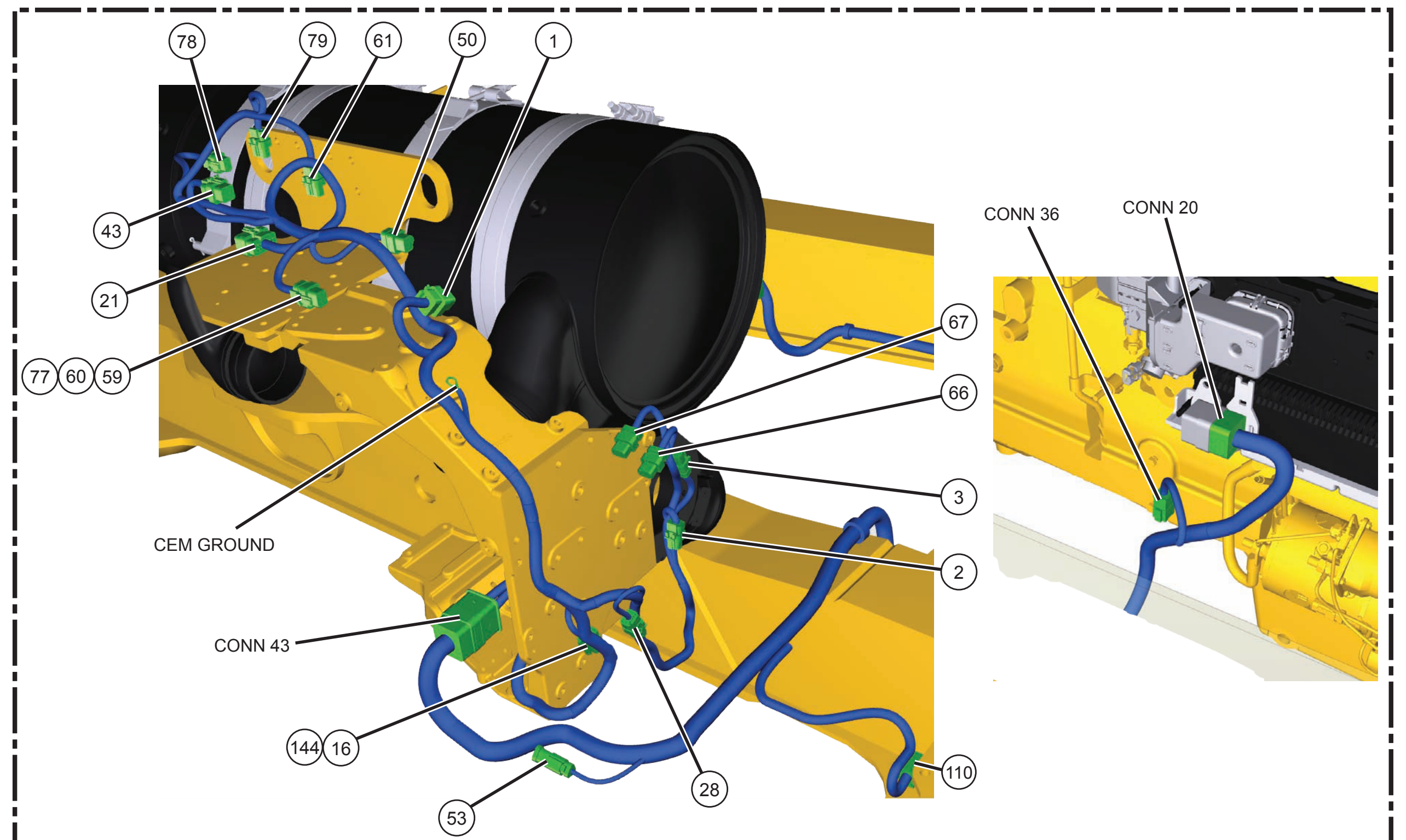
AIR CLEANER HARNESS (L4D, L4E, L4F)



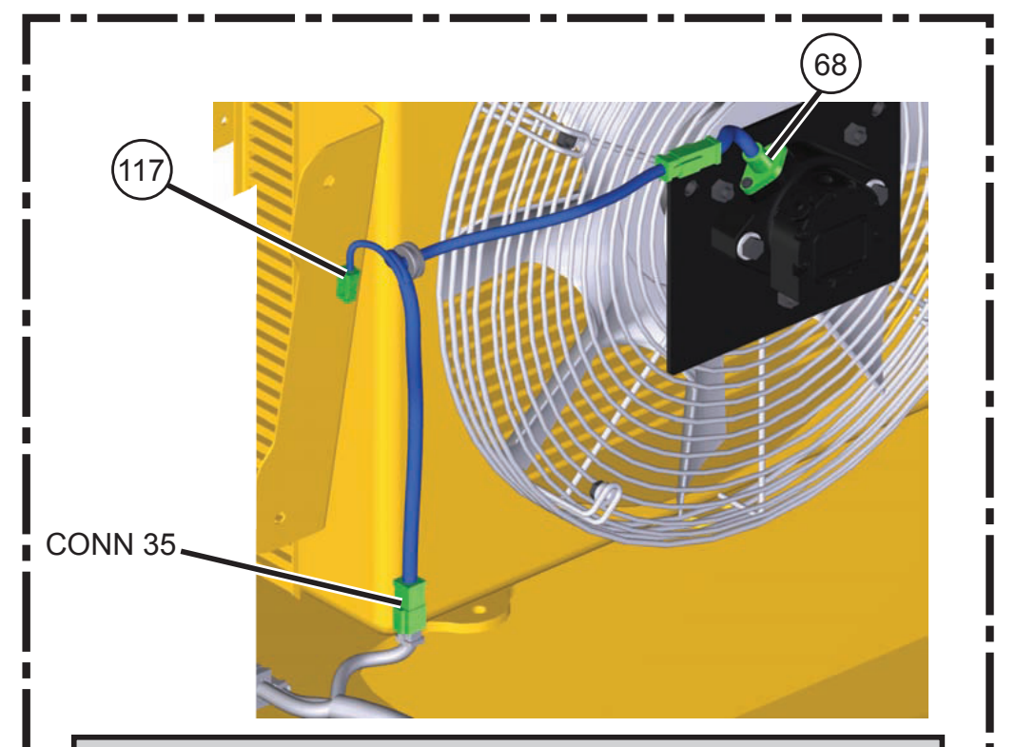
COOLANT JUMPER HARNESS (L4D, L4E, L4F)



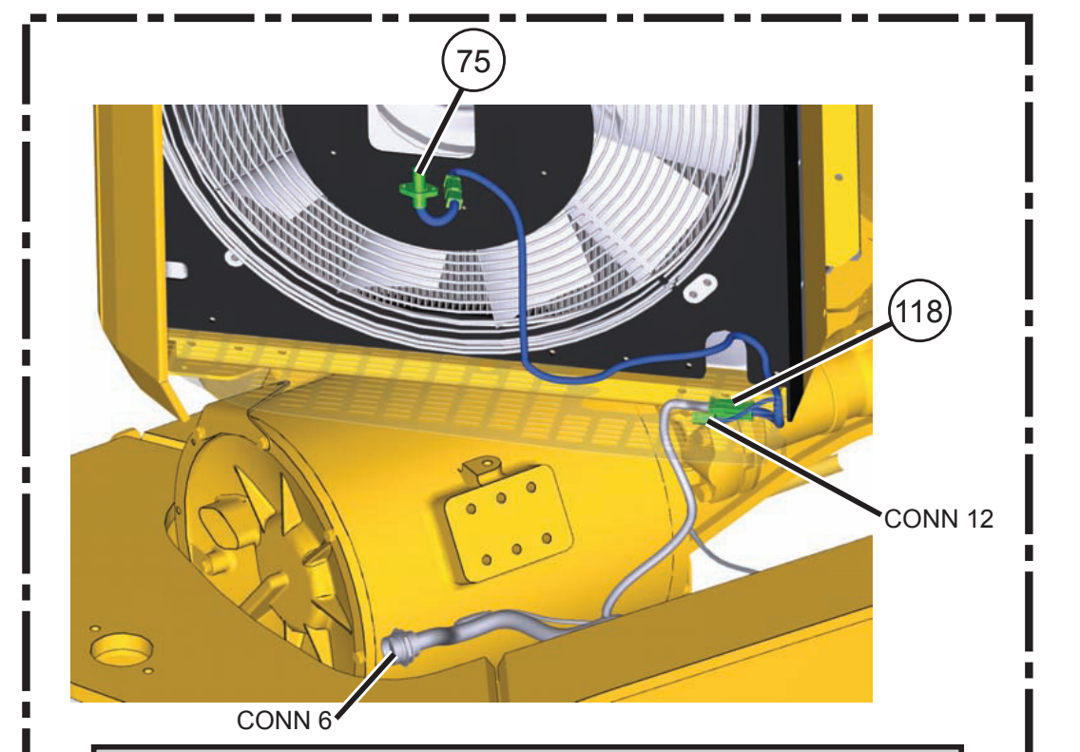
ALTERNATOR HARNESS



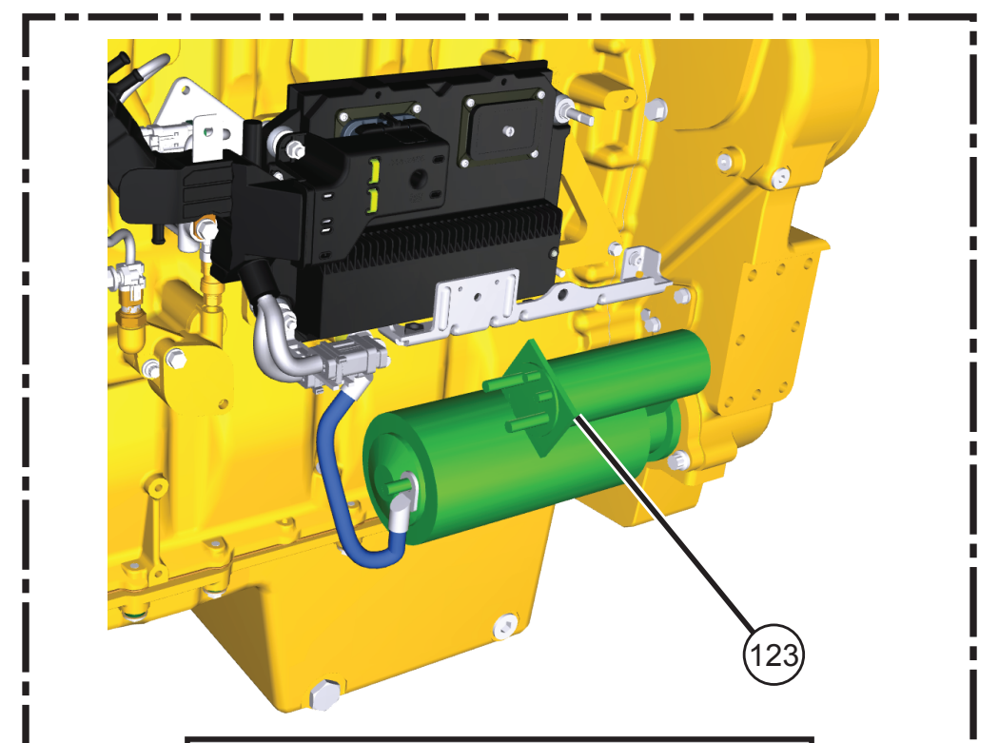
AFTERTREATMENT AND CEM HARNESS



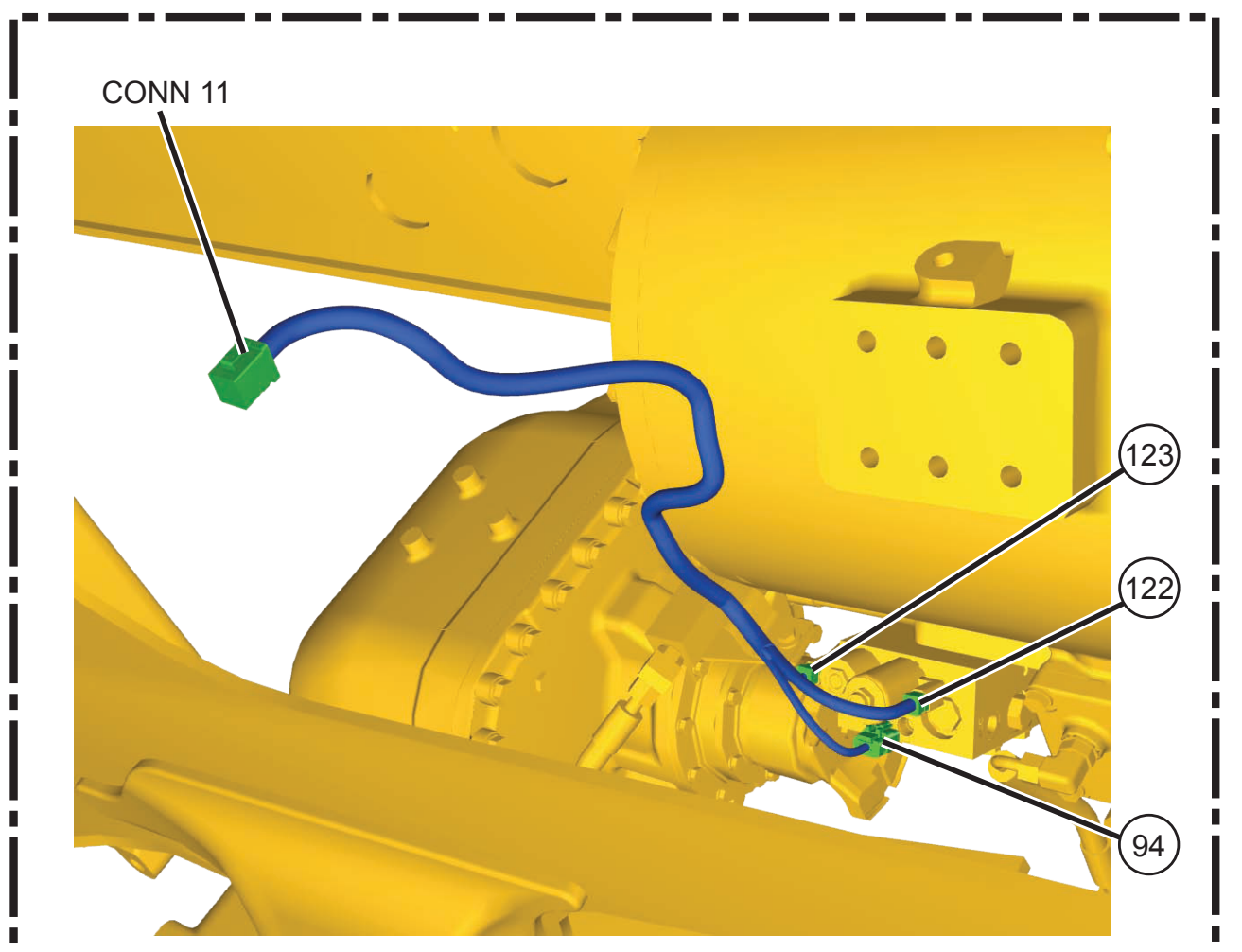
ATAAC HARNESS



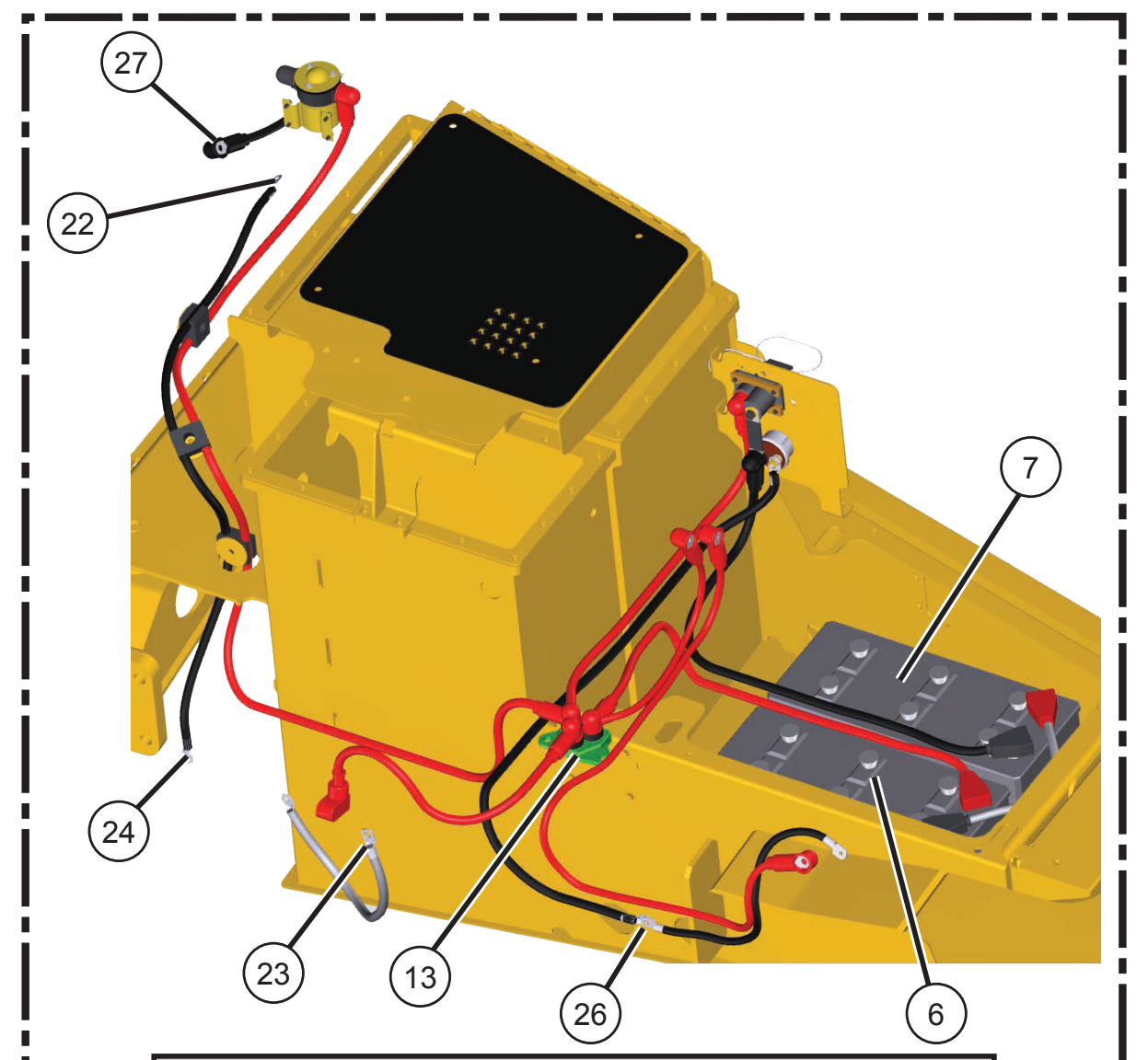
MAIN FAN HARNESS



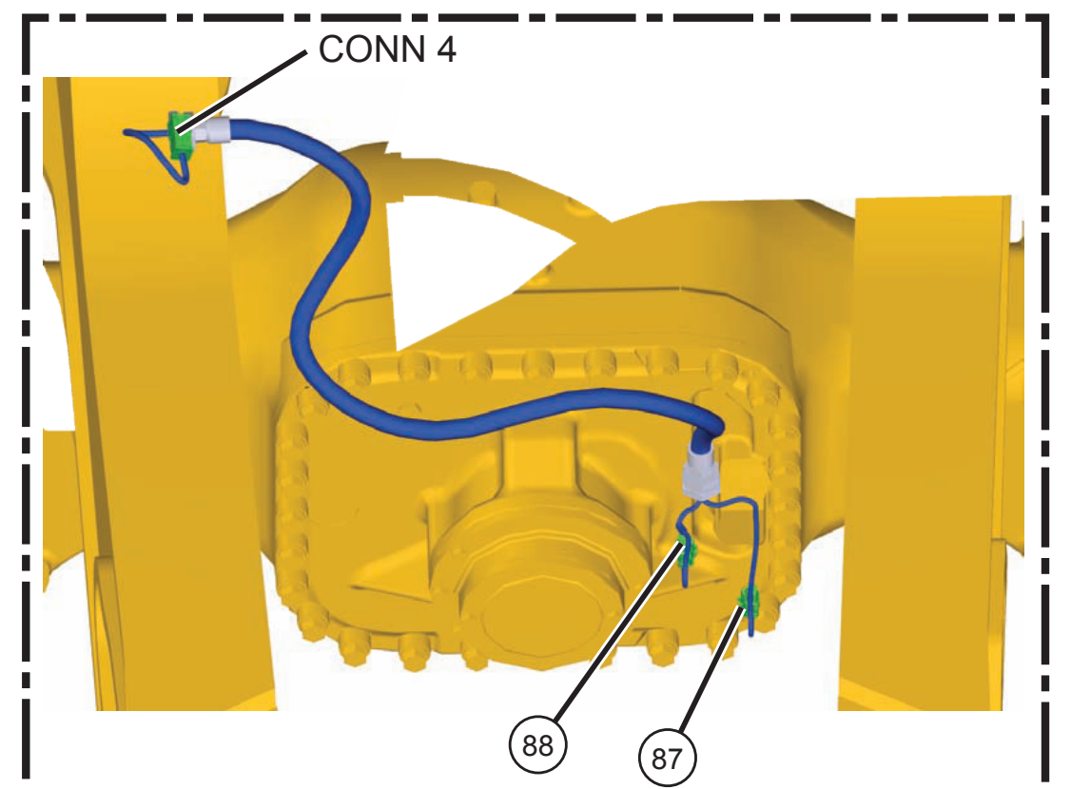
STARTER



OTG HARNESS



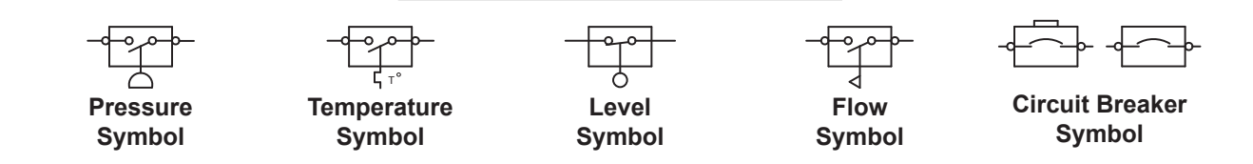
GROUND HARNESSES



FRONT AXLE HARNESS

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.

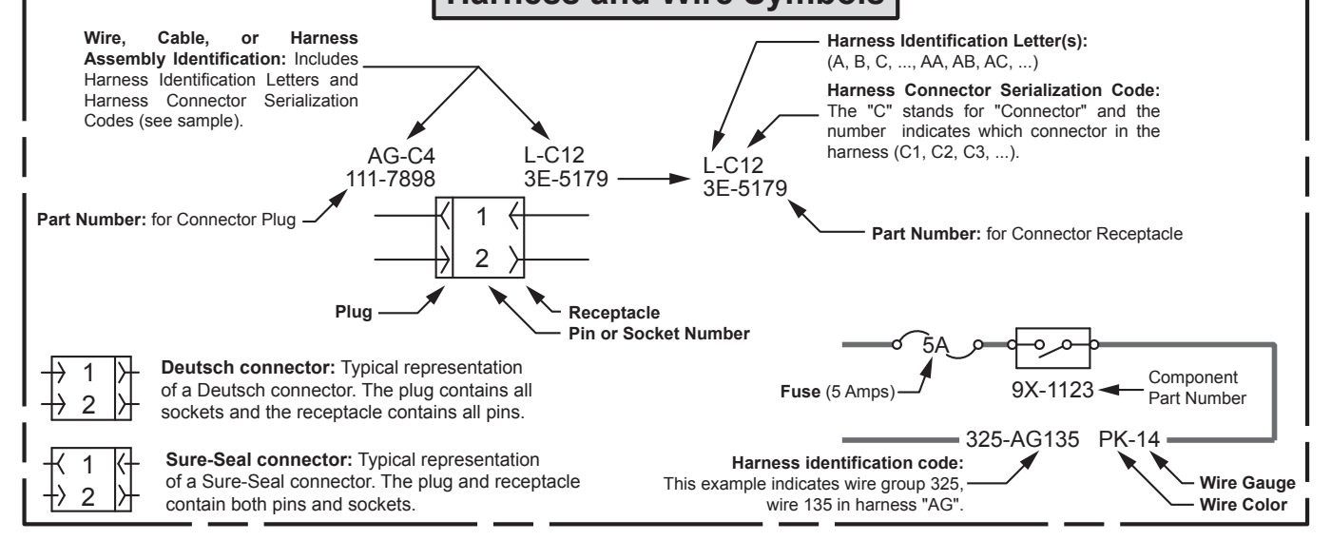
Sender: A component that is used with a temperature or pressure gauge. The sender measures the temperature or pressure. Its resistance changes to give an indication to the gauge of the temperature or pressure.

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).

Harness Identification Letter(s): (A, B, C, ..., AA, AB, AC, ...)

Harness Connector Serialization Code: The "C" stands for "Connector" and the number indicates which connector in the harness (C1, C2, C3, ...).

Part Number: for Connector Plug

Part Number: for Connector Receptacle

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.

Fuse (5 Amps)

Harness identification code: This example indicates wire group 325, wire 135 in harness "AG".

UENR1735 VOL 1 of 2

42 Page, (Dimensions: 56 inches x 35 inches)

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
🟦	VOLTAGE CONVERTER OUTPUT CIRCUIT
🟧	STARTING CIRCUIT
🟥	START AID CIRCUIT
🟪	TRANSMISSION CONTROL CIRCUIT
🟥	ENGINE CONTROL CIRCUIT
🟨	HEATER AND AIR CONDITIONER CIRCUIT
🟫	TURN SIGNAL / WIPER WASHER CIRCUIT
🟩	ECM - AIR COOLED ER
▨	CAT DATA LINK
▨	CAN DATA LINK A
▨	CAN DATA LINK B
🟩	CHASSIS CONTROL CIRCUIT

OTHER COLOR DESCRIPTIONS

🟦	HIGHWAYS

SYMBOL	DESCRIPTION
─●─	CIRCUIT CONNECTED
┼	CIRCUIT NOT CONNECTED
⏚	ELECTRICAL CONNECTION TO MACHINE STRUCTURE
⏚	INTERNAL ELECTRICAL CONNECTION TO SURFACE OF COMPONENT
→)—	CONNECTOR
H#	CIRCUIT GROUPING DESIGNATION
- - -	ATCH WIRE, CABLE, COMPONENT
○─○	SPLICE
○	BLADE, SPADE, RING OR SCREW TERMINAL

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

IDENT	PART NO. HARNESS AS.	CHG	LOC	DESCRIPTION
A	239-5042	00	K-18	REAR LAMPS
AC	336-2815	03	D-16	REAR CHASSIS-TIPPER (735/740 ONLY)
	336-2813	02	K-15	REAR CHASSIS-EJECTOR (740EJ ONLY)
	336-2814	00	D-16	REAR CHASSIS-TIPPER (LG WHEEL BASE)
AH	337-6319	03	F-18	MID AXLE
AK	337-6320	03	F-18	REAR AXLE
C	336-2808	04	D-8	FRONT CHASSIS
CA	368-7777	00	B-13	TRANSMISSION
CG	336-2818	03	B-4	CEM
CH	337-6318	03	C-16	FRONT AXLE
CJ	336-2820	03	H-2	ALTERNATOR
CL	368-7778	00	B-15	OTG
CM	336-2812	02	A-14	MAIN FAN
EN	363-0659	00	J-11	ENGINE
ER	356-5035	00	F-11	ENGINE (LRC)
FK	356-9948	00	G-11	FUEL JUMPER
	356-9948	00	D-11	FUEL JUMPER (LRC)
GC	356-1643	00	I-10	INTERNAL ENG W/BRAKE
	354-4753	00	F-11	INTERNAL ENG W/BRAKE (LRC)
H	301-8353	03	E-2	MIRROR RH
HA	336-2811	04	A-8	FENDER
HC	301-8354	03	K-2	MIRROR LH
HG	342-9212	02	F-6	STEER SW
J	336-2817	02	D-16	HITCH
NA	344-5734	00	I-10	CHARGE AIR COOLER
NG	343-8408	00	G-9	COOLANT JUMPER
	357-7675	00	D-11	COOLANT JUMPER (LRC)
PH	363-0625	00	B-4	AFTERTREATMENT
TF	341-8378	02	G-14	ECPC TRANSMISSION
T	336-2810	03	G-6	HOOD
TA	336-2819	03	I-7	AIR CLEANER
TC	336-2816	03	K-6	FRONT CHASSIS BREAKER
TE	336-2821	02	H-7	ATAAC
TM	358-6076	01	G-2	AIR CLEANER (LRC ONLY)
U	341-8379	03	G-15	ECPC TRANSMISSION
UC	305-4315	06	F-16	ECPC TRANSMISSION
	WIRE AS.			
CK	353-2235	00	J-4	BREAKER LINK
TH	353-2234	01	K-6	CAB BREAKER WIRE AS.
	CABLE AS.			
AA	336-9305	03	I-5	STARTER
CC	206-0154	00	I-4	LINK
EE	336-9299	02	H-5	STARTER GROUND
FF	336-9301	02	H-4	DISCONNECT GROUND
GG	336-9298	02	I-4	BATTERY NEG
HH	336-9304	02	I-5	SEC STER RELAY TO MOTOR
JJ	336-9300	02	I-4	BATTERY TO BUS BAR
KK	336-9303	02	I-6	SEC STER MOTOR TO GND
LL	336-9302	03	I-4	SEC STER RELAY TO BUS
TT	336-9306	04	J-4	ALTERNATOR
PP	356-9741	01	I-4	START RECEPTACLE POS
AG	340-2284	02	I-5	ALTERNATOR GND
MM	7G-1060	00	A-9	CAB GND TO FRAME GND
SS	338-9969	03	I-4	BREAKER SUPPLY

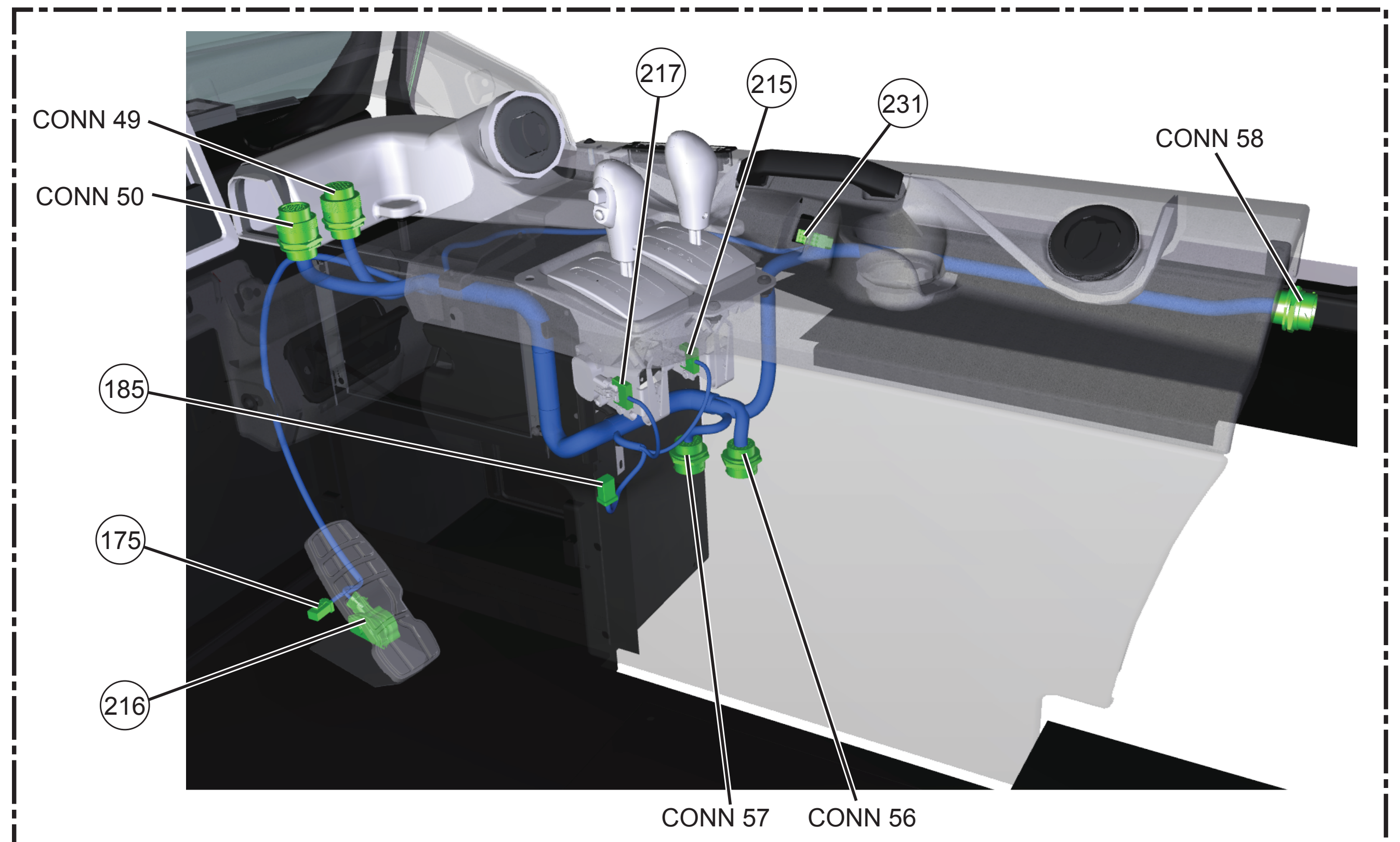
THIS DIAGRAM IS FOR THE 735B, 740B & 740BEJ ARTICULATED DUMP TRUCK WITH TIER IV ENGINE
(330-9004 CHG00) RM793, RM794, RM795, RM847, RM848 & RM849
DESIGN CONTROL P456

COMPONENTS ARE SHOWN INSTALLED ON A FULLY OPERABLE MACHINE WITH THE KEY AND ENGINE OFF, THE XMSN SHIFTER IN NEUTRAL AND THE PARK BRAKE SW IN THE OFF POSITION. WIRES SHOWN WITH A 'T' EXTENSION ARE THIN WALL CABLE

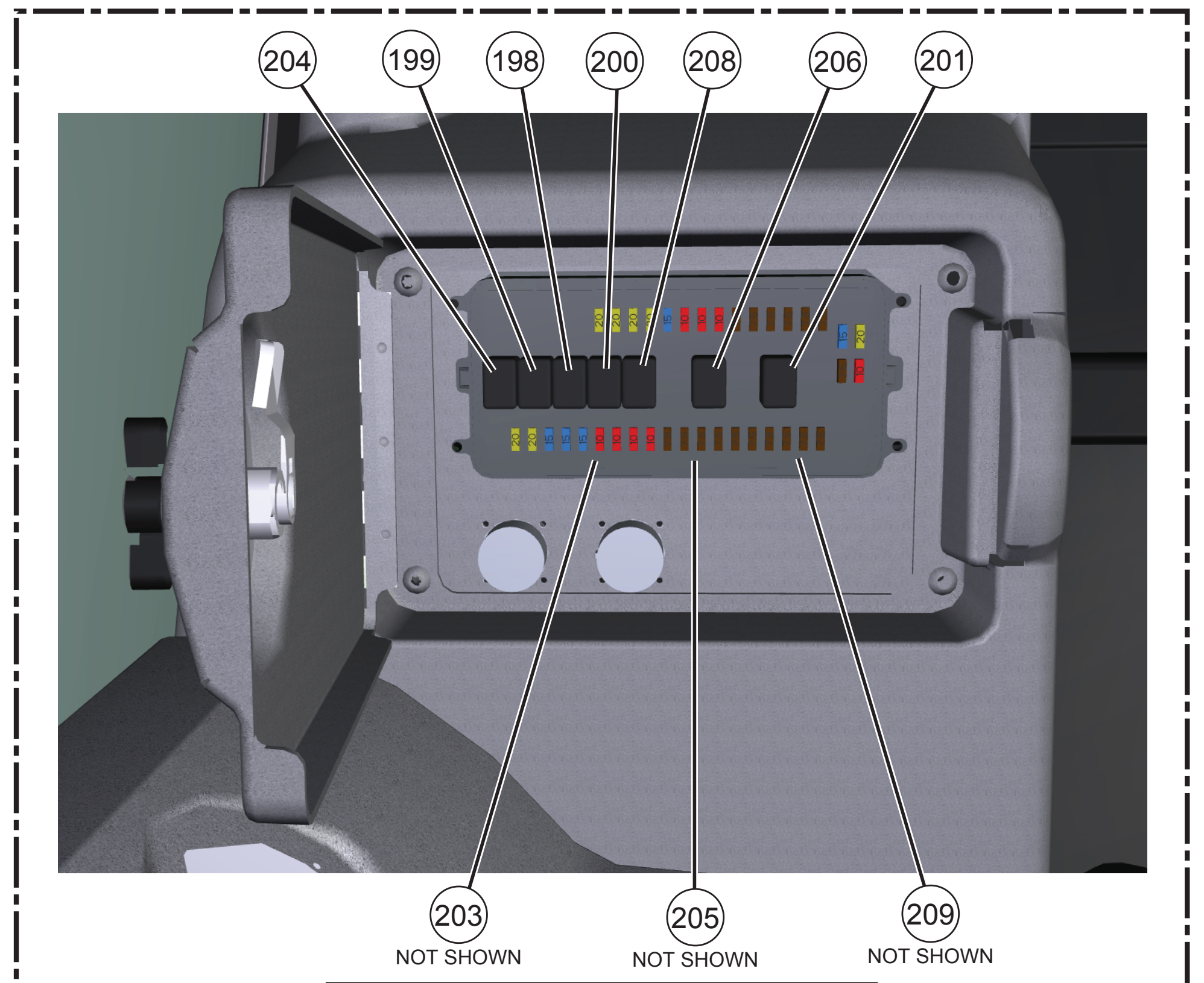
NOTE A: NORMALLY OPEN BEFORE REFRIGERANT CHARGE
NOTE C: NORMALLY CLOSED WHEN DOOR OPEN
NOTE H: ELEVATED IDLE ENGINE SPEED SET SWITCH (DEALER FIT ONLY)
GND WIRE CAN BE CONNECTED TO J1 PIN 5 OR 18 OR CHASSIS GND

AT SUB-SYSTEM SCHEMATIC REFERENCE		
APPLICATION	PART NUMBER	SHEET/LOCATION
ENGINE C15 LRC	336-8660	SHT1/ F11
ENGINE C15 STD/CEM	342-6382	SHT1/ J11
CAB	351-0870	-

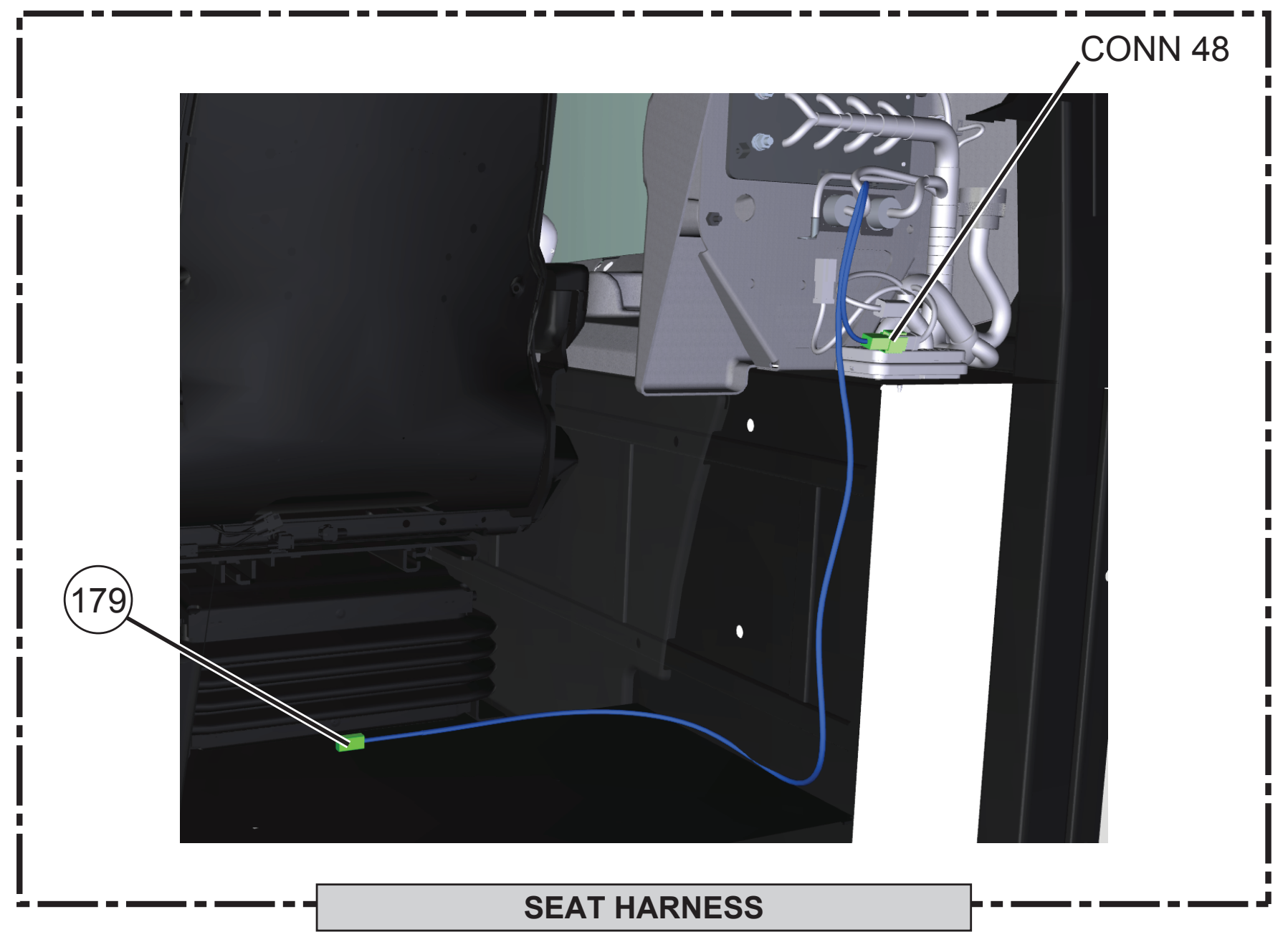
THIS SCHEMATIC IS FOR THE 735B, 740B AND 740B EJ ELECTRICAL SYSTEM
VOLUME 1 of 2: CHASSIS
MEDIA NUMBER: UENR1735
SCHEMATIC PART NUMBER: 330-9004, CHANGE: 00, VERSION: -
Components are shown installed on a fully operable machine with the key and engine off, transmission shifter in neutral and with parking brake set.
Refer to the appropriate Service Manual for Troubleshooting, Specifications and Systems Operations.


CONN 49
CONN 50
217
215
231
CONN 58
185
175
216
CONN 57
CONN 56

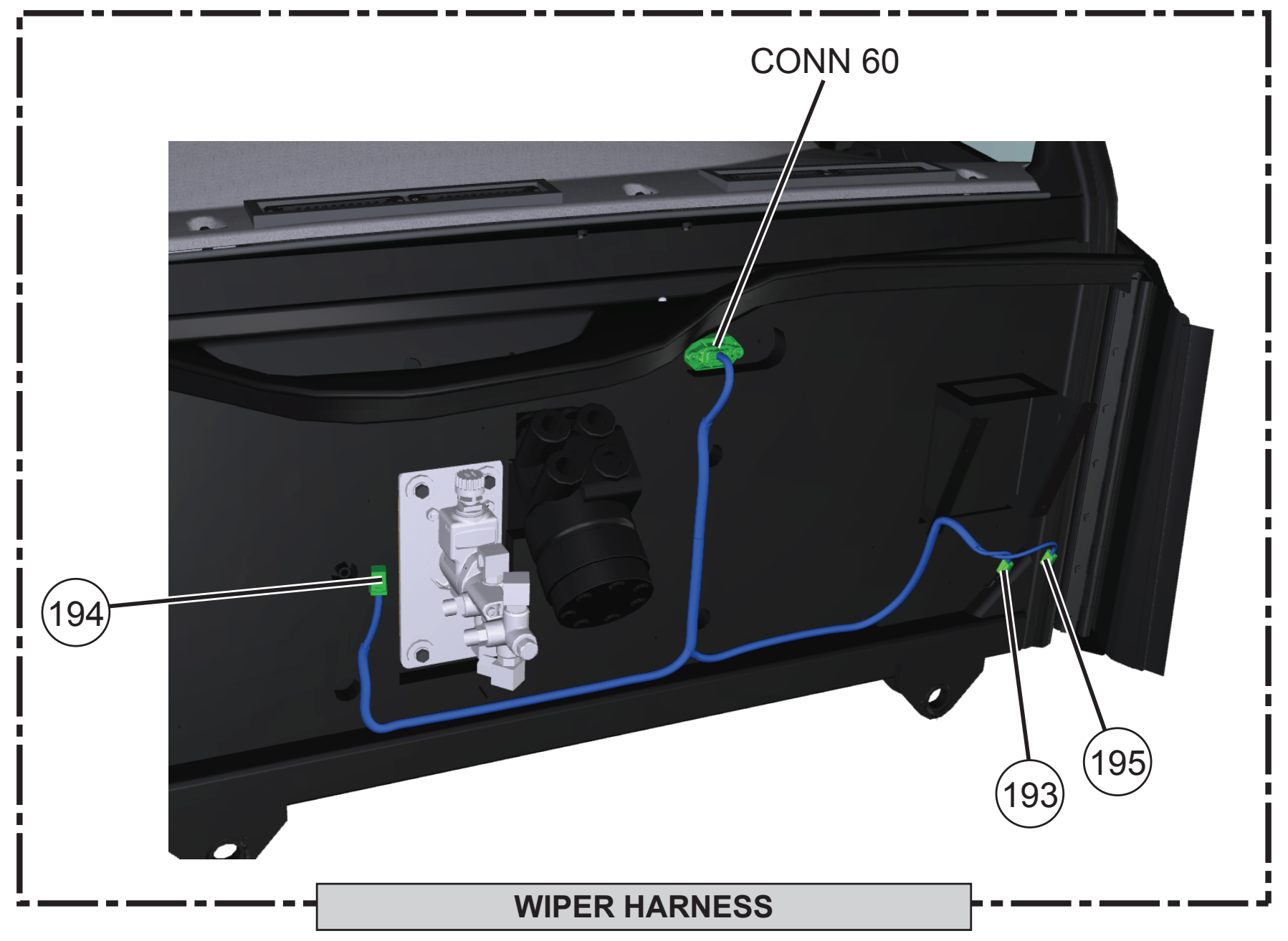
GEARSHIFT HARNESS


204
199
198
200
208
206
201
203
NOT SHOWN
205
NOT SHOWN
209
NOT SHOWN

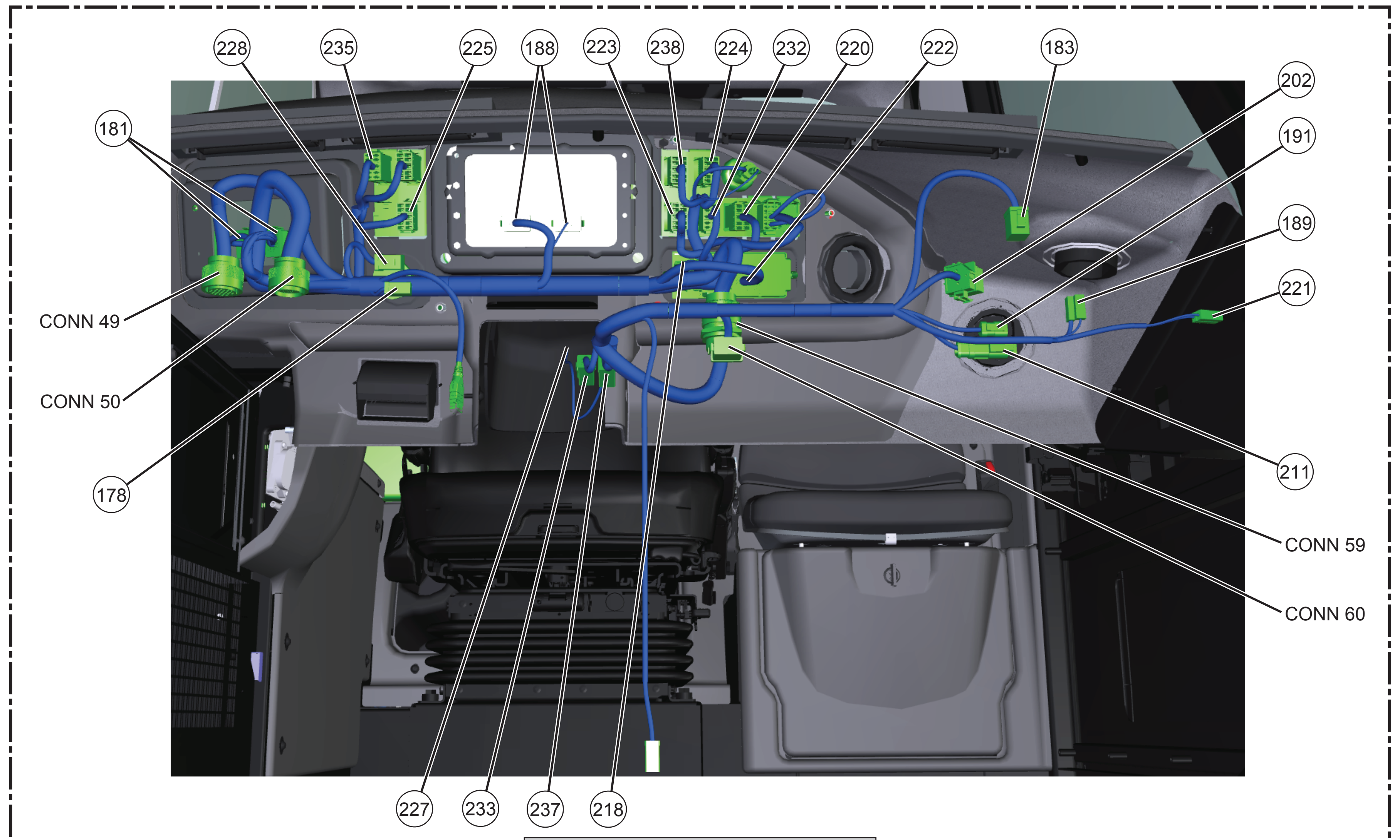
FUSE PANEL



SEAT HARNESS


CONN 60
194
193
195

WIPER HARNESS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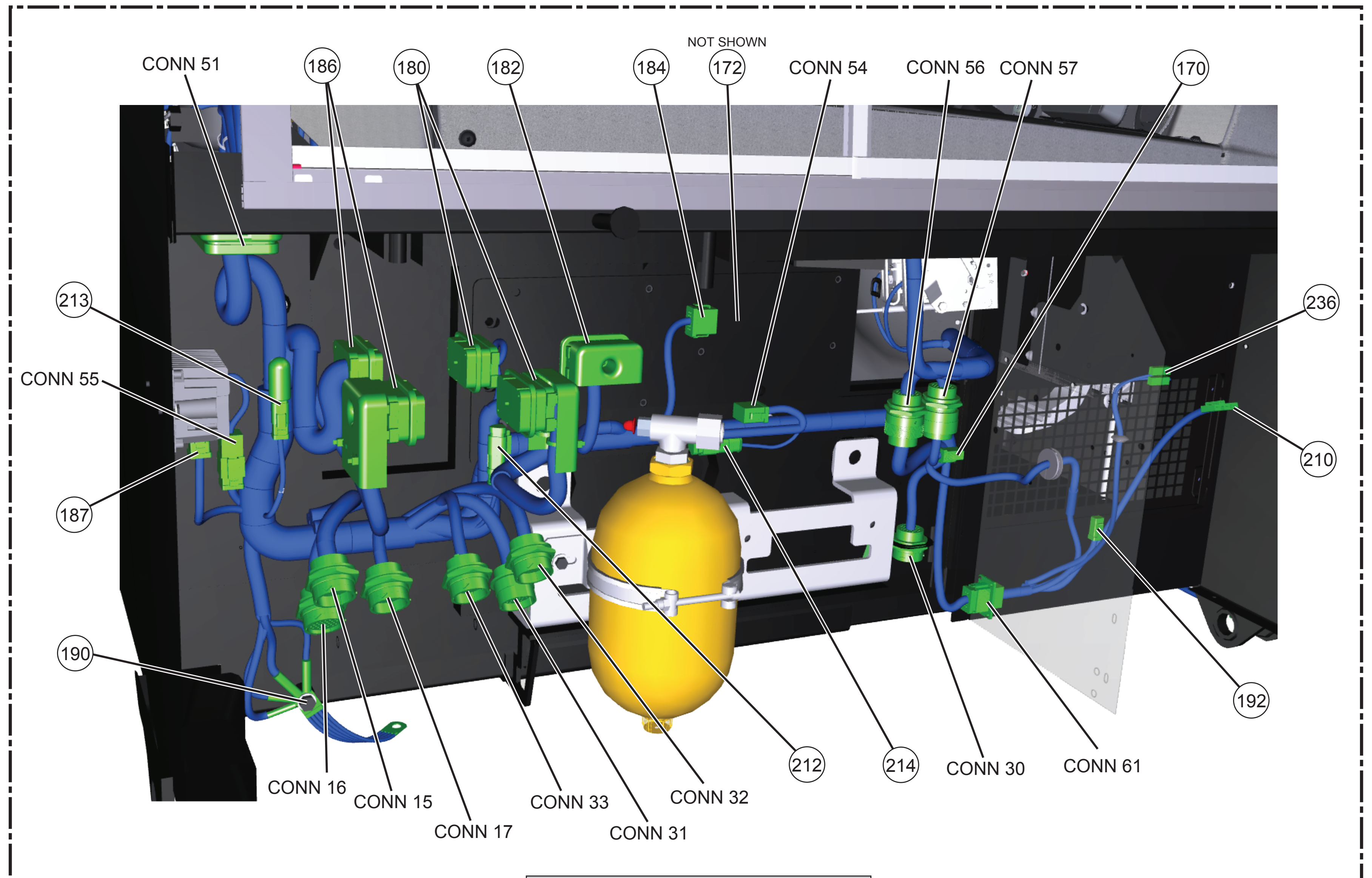
235
225
188
223
238
224
232
220
222
183
202
181
191
189
221
CONN 49
CONN 50
178
211
CONN 59
CONN 60
227
233
237
218

DASH AND BULKHEAD HARNESSES


NOT SHOWN
CONN 51
186
180
182
184
172
CONN 54
CONN 56
CONN 57
170
213
CONN 55
236
187
210
190
192
CONN 16
CONN 15
CONN 17
CONN 33
CONN 31
CONN 32
212
214
CONN 30
CONN 61

MAIN CAB AND HVAC HARNESSES

Component Location

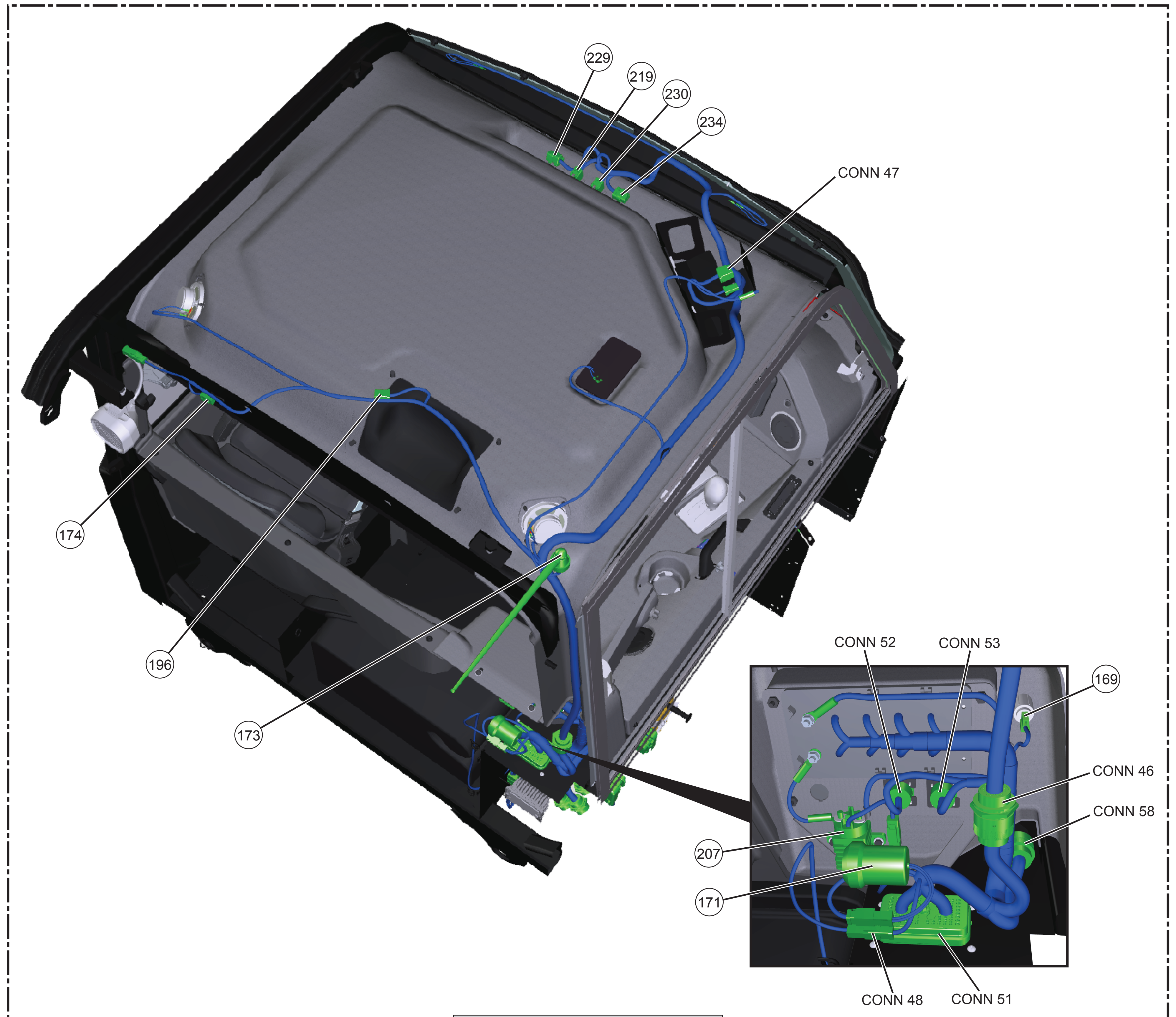
Component	Schematic Location	Machine Location	Component	Schematic Location	Machine Location
12V Power Socket	J-15	169	Relay - Horn	J-12	204
Actuator - Water Valve	D-1	170	Relay - Int Second Steer	K-12	205
Alarm - Action	J-15	171	Relay - Int Wiper	K-12	206
Antenna	G-6	172	Relay - Main	I-12	207
Antenna - Radio	L-15	173	Relay - Second Steer	K-12	208
Beacon	J-18	174	Relay - Washer	K-12	209
Brake Pedal	E-11	175	Resistor	D-1	210
Camera - Rear Camera Cable	G-12	176	Resistor - CAN 2 Terminating A	B-7	211
Cigar Lighter	E-12	177	Resistor - CAN 2 Terminating B	F-6	212
Coil - MSS Exciter	B-12	178	Resistor - IAC Override	C-3	213
Compressor - Air Seat	J-15	179	Resistor - J1939 Datalink Terminating A	G-6	214
Control - Chassis ECU	L-5	180	Sensor - Hoist Control	F-11	215
Control - CMPD	G-12	181	Sensor - Throttle	G-11	216
Control - Communication Gateway	H-9	182	Sensor - Transmission Control	F-11	217
Control - Key Reader	B-5	183	Switch - Air Condition	H-15	218
Control - Product Link	H-6	184	Switch - CPS Force Regen	L-17	219
Control - Shift/Hoist Quad Lever	F-11	185	Switch - Dimmer	F-15	220
Control - Transmission/Chassis ECU	L-5	186	Switch - Dome Lamp	A-7	221
Converter 24V 12V	C-3	187	Switch - Fan Speed	E-12	222
Display - Indicator	F-12	188	Switch - Hazard	F-15	223
Flasher	A-7	189	Switch - Head Side Lamp	E-15	224
Ground - Cab	D-5	190	Switch - Heated Mirror	I-15	225
Module - Intermittent Wiper Delay	A-5	191	Switch - Hood	I-15	226
Motor - Blower	C-1	192	Switch - Horn	B-5	227
Motor - Front Washer	C-4	193	Switch - Key Start	A-12	228
Motor - Front Wiper	C-4	194	Switch - Leftt Hand Mirror	K-18	229
Motor - Rear Washer	C-4	195	Switch - Long Range Lamps	L-17	230
Motor - Rear Wiper	J-18	196	Switch - Park Brake	E-11	231
Radio	L-15	197	Switch - Rear Wiper	G-15	232
Relay - Backup Alarm	K-12	198	Switch - Retarder	A-5	233
Relay - Fuel Prime 1	J-12	199	Switch - Right Hand Mirror	L-18	234
Relay - Fuel Prime 2	K-12	200	Switch - Secondary Steer	G-15	235
Relay - Fuel Pump	L-12	201	Switch - Temperature	C-2	236
Relay - Headlamp	A-5	202	Switch - Wiper/Washer/Turn Signal	B-5	237
Relay - Heated Mirror	L-12	203	Switch - Worklamp	E-15	238

Machine locations are repeated for components located close together.

Connector Location

Connector Number	Schematic Location	Connector Number	Schematic Location
CONN 15	H-1	CONN 51	J-9
CONN 16	G-1	CONN 52	I-9
CONN 17	F-1	CONN 53	I-9
CONN 30	I-1	CONN 54	F-9
CONN 31	J-1	CONN 55	E-9
CONN 32	K-1	CONN 56	D-9
CONN 33	L-1	CONN 57	C-9
CONN 46	J-16	CONN 58	B-9
CONN 47	L-16	CONN 59	A-9
CONN 48	J-15	CONN 60	C-5
CONN 49	B-12	CONN 61	D-3
CONN 50	C-12		

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.


229
219
230
234
CONN 47
174
196
173
CONN 52
CONN 53
169
CONN 46
CONN 58
207
171
CONN 48
CONN 51

ROOF AND FUSE HARNESSES

CATERPILLAR®

UENR1735
June 2011

Schematic

735B and 740B Articulated Truck
740B Ejector Articulated Truck
Electrical System

735B:	740B:	740B EJ:
L4D1-UP	L4E1-UP	L4F1-UP
T4P1-UP	T4R1-UP	T4S1-UP

Volume 2 of 2: Cab

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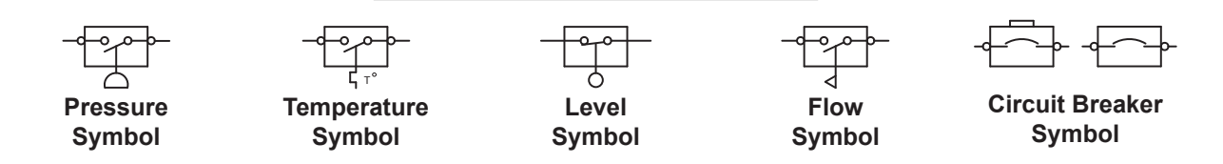
UENR1735 VOL 2 of 2
42 Page, (Dimensions: 56 inches x 35 inches)

Harness And Wire Electrical Schematic Symbols

Symbols


Pressure Symbol
Temperature Symbol
Level Symbol
Flow Symbol
Circuit Breaker Symbol

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.

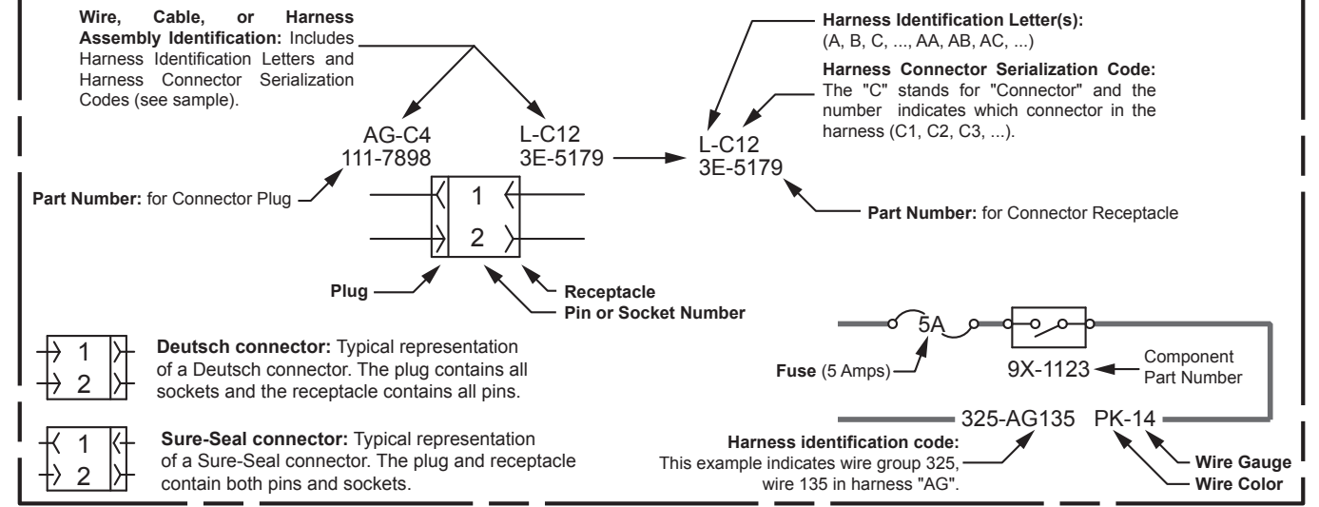
Sender: A component that is used with a temperature or pressure gauge. The sender measures the temperature or pressure. Its resistance changes to give an indication to the gauge of the temperature or pressure.

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


AG-C4
111-7898
L-C12
3E-5179
L-C12
3E-5179
1
2
Plug
Receptacle
Pin or Socket Number
5A
9X-1123
325-AG135 PK-14
Wire Gauge
Wire Color
Component Part Number
Fuse (5 Amps)

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

Harness Identification Letter(s): (A, B, C, ..., AA, AB, AC, ...)

Harness Connector Serialization Code: The "C" stands for "Connector" and the number indicates which connector in the harness (C1, C2, C3, ...).

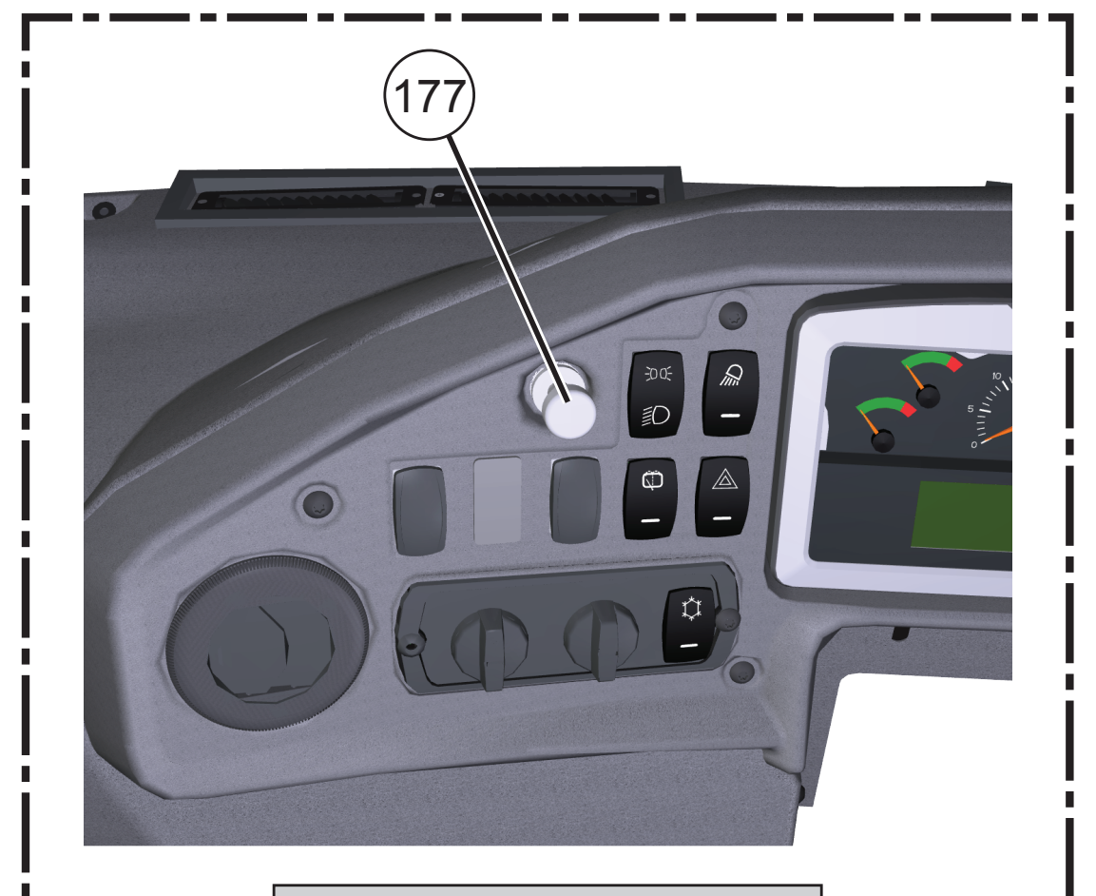
Part Number: for Connector Plug

Part Number: for Connector Receptacle

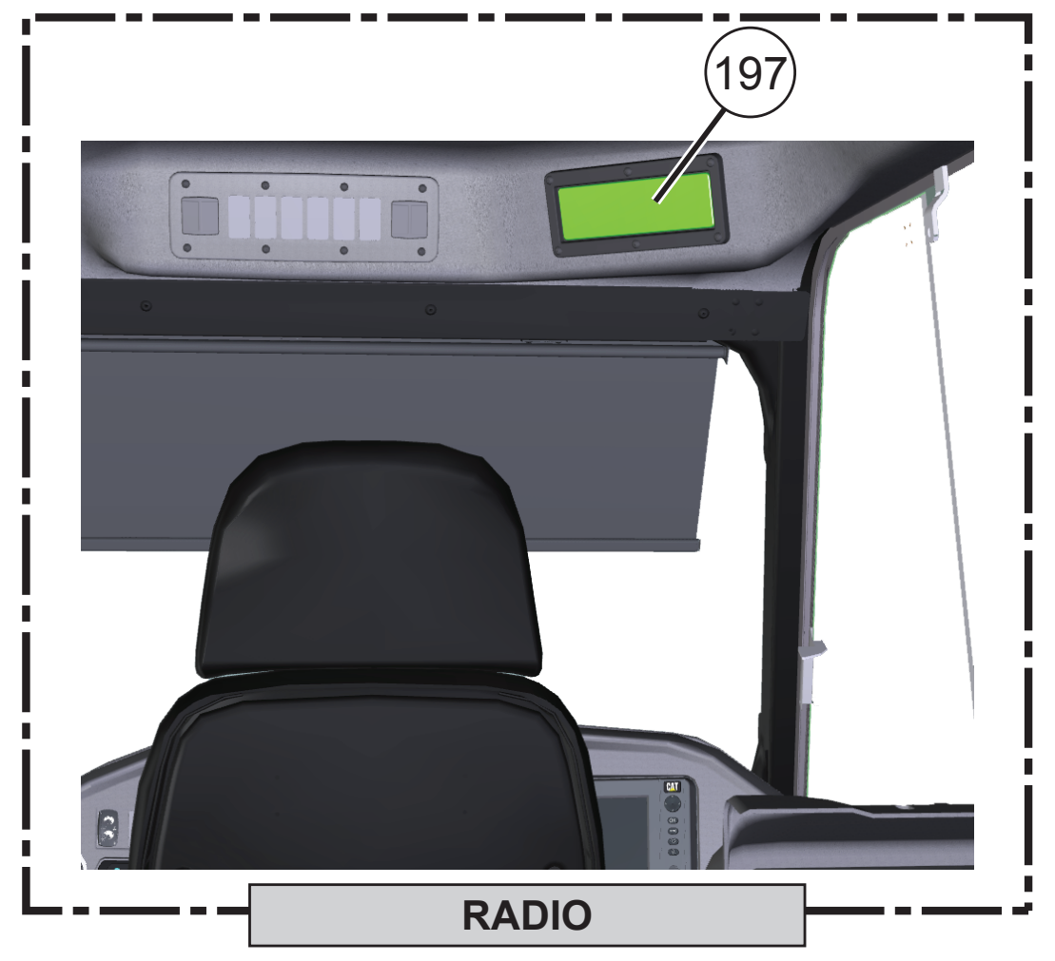
Deutsch connector: Typical representation of a Deutsch connector. The plug contains all sockets and the receptacle contains all pins.

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

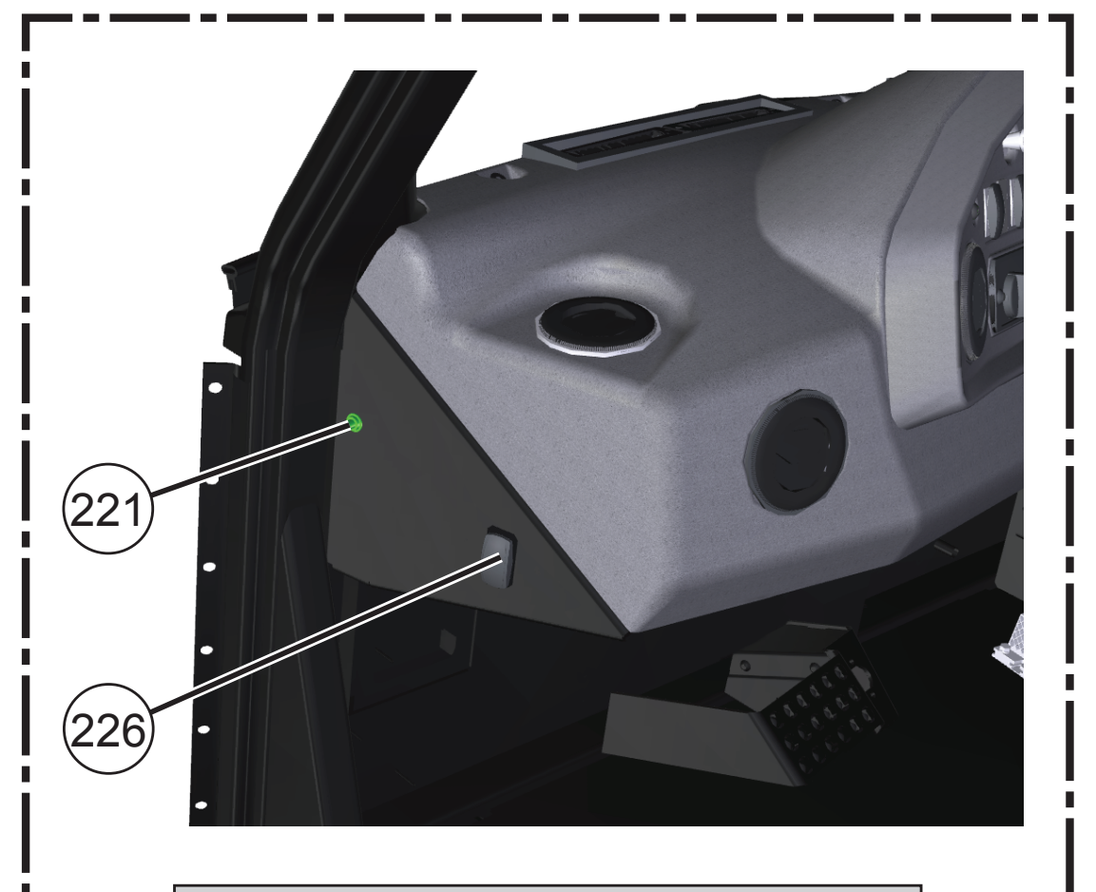
Harness identification code: This example indicates wire group 325, wire 135 in harness "AG".



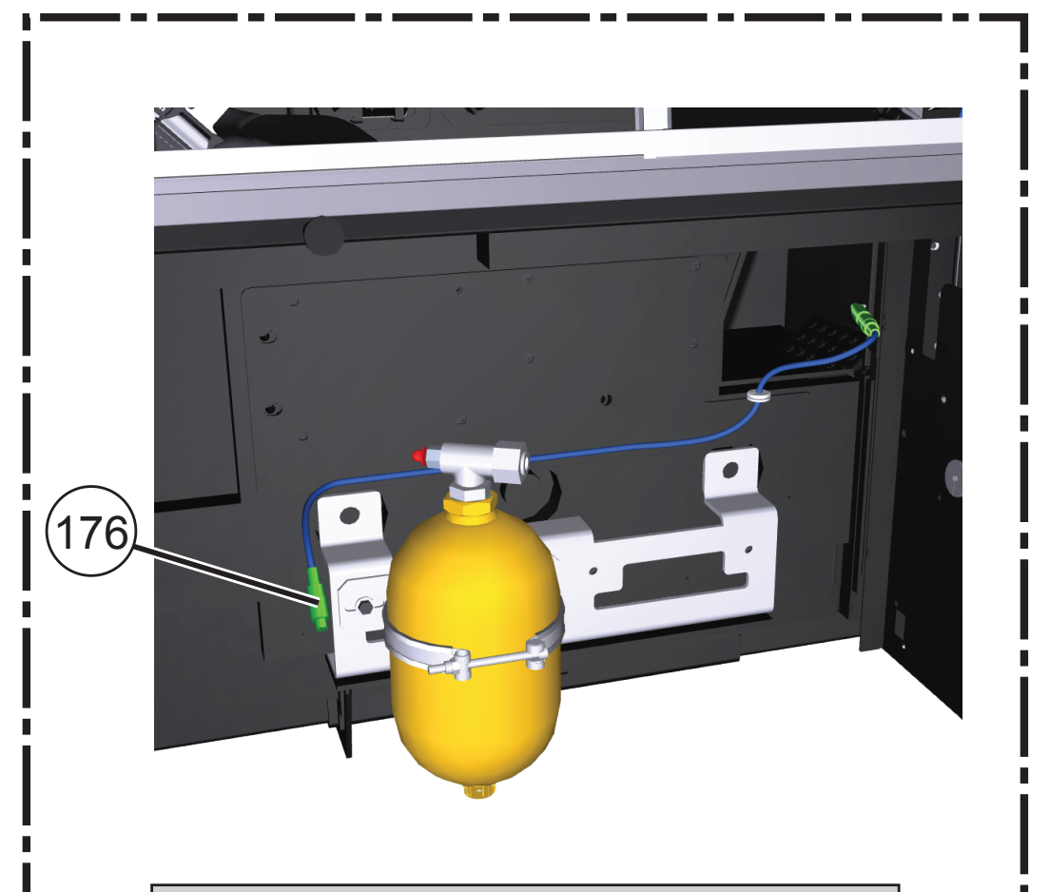
CIGAR LIGHTER



RADIO



DOME LAMP AND HOOD SWITCH



REAR CAMERA CABLE

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42 Page, (Dimensions: 56 inches x 35 inches)

CONN 46
CONN 47
CONN 48
CONN 14
CONN 51
CONN 52
CONN 53
CONN 54
CONN 55
CONN 56
CONN 57
CONN 58
CONN 59
CONN 49
CONN 50
CONN 60
CONN 61
CONN 33
CONN 32
CONN 31
CONN 30
CONN 15
CONN 16
CONN 17
HVAC
RESISTOR 257-5029
BLOWER MOTOR 275-6706
MOTOR
TEMPERATURE SW
FRONT WIPER MOTOR 328-2264

IDENT	PART NO.	CHG	LOC	HARNESS
HARNESS AS.				
E	332-9706	03	F-1	MAIN CAB
F	332-9707	04	J-16	ROOF
K	354-7735	01	L-9	FUSE
L	332-9703	03	E-13	DASH
R	332-9702	02	B-6	BULKHEAD
W	332-9701	00	D-4	WIPER
CA	352-2194	00	E-2	HVAC
EA	332-9704	04	E-9	GEARSHIFT
FK	364-3066	01	L-15	LIGHT JUMPER
FL	364-3066	01	L-15	LIGHT JUMPER
KM	346-9671	01	J-15	SEAT
WIRE AS./CABLE AS.				
EK	346-8101	00	F-9	JUMPER
KA	354-7732	00	J-12	MAIN POWER RELAY
RC	200-5728	02	K-15	RADIO

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

SYMBOL	DESCRIPTION
─┼─ ●	CIRCUIT CONNECTED
─┼─	CIRCUIT NOT CONNECTED
⏚	ELECTRICAL CONNECTION TO MACHINE STRUCTURE
⏚	INTERNAL ELECTRICAL CONNECTION TO SURFACE OF COMPONENT
→)─	CONNECTOR
H#	CIRCUIT GROUPING DESIGNATION
– – –	ATCH WIRE, CABLE, COMPONENT
○─○	SPLICE
○	BLADE, SPADE, RING OR SCREW TERMINAL

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
■	VOLTAGE CONVERTER OUTPUT CIRCUIT
■	STARTING CIRCUIT
■	START AID CIRCUIT
■	TRANSMISSION CONTROL CIRCUIT
■	MACHINE SECURITY CONTROL CIRCUIT
■	ENGINE CONTROL CIRCUIT
■	HEATER AND AIR CONDITIONER CIRCUIT
■	TURN SIGNAL / WIPER WASHER CIRCUIT
▨	CAT DATA LINK
▨	RS-232 DATA LINK
▨	CAN DATA LINK A
▨	CAN DATA LINK B
■	CHASSIS CONTROL CIRCUIT
OTHER COLOR DESCRIPTIONS	
■	HIGHWAYS

THIS DIAGRAM IS FOR THE 735B, 740B & 740BEJ ARTICULATED
DUMP TRUCK WITH TIER IV ENGINE (351-0870 CHG00)
RM793, RM794, RM795, RM847, RM848 & RM849
DESIGN CONTROL P456

COMPONENTS ARE SHOWN INSTALLED ON A FULLY OPERABLE MACHINE WITH THE KEY AND ENGINE OFF, THE XMSN SHIFTER IN NEUTRAL AND THE PARK BRAKE SW IN THE OFF POSITION. WIRES SHOWN WITH A 'T' EXTENSION ARE THIN WALL CABLE

NOTE A: NORMALLY OPEN BEFORE REFRIGERANT CHARGE
NOTE C: NORMALLY CLOSED WHEN DOOR OPEN
NOTE H: ELEVATED IDLE ENGINE SPEED SET SWITCH (DEALER FIT ONLY)
GND WIRE CAN BE CONNECTED TO J1 PIN 5 OR 18 OR CHASSIS GND

THIS SCHEMATIC IS FOR THE 735B, 740B, AND 740B EJ ELECTRICAL SYSTEM

VOLUME 2 of 2: CAB

MEDIA NUMBER: UENR1735

SCHEMATIC PART NUMBER: 351-0870, 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.