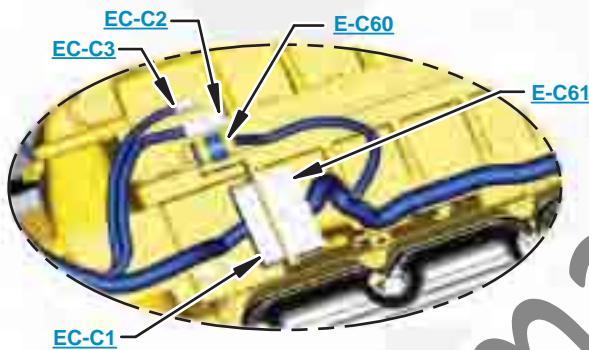




***This document is best viewed at a screen resolution of 1024 X 768.***

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

---

## 938H and IT38H Wheel Loader Electrical System

---

**938H:**  
MCC1-UP  
MJC1-UP  
JKM1-UP  
LKM1-UP

**IT38H:**  
JNJ1-UP

**Volume 1 of 2: Engine and Chassis Wiring**  
**Volume 1 of 2: Cab Wiring**

# COMPONENT LOCATION

## Volume 1 of 2 - ENGINE AND CHASSIS WIRING



Component	Schematic Location	Machine Location	Component	Schematic Location	Machine Location
Alarm - Backup	<a href="#">I-17</a>	<a href="#">1</a>	Sensor - Torque Converter Oil Temperature	<a href="#">H-7</a>	<a href="#">49</a>
Alternator	<a href="#">J-15</a>	<a href="#">2</a>	Sensor - Wastegate	<a href="#">D-18</a>	<a href="#">50</a>
Battery	<a href="#">J-12</a>	<a href="#">3</a>	Sensor - XMSN Pump Pressure	<a href="#">H-7</a>	<a href="#">51</a>
Breaker - Buss (Cab)	<a href="#">H-13</a>	<a href="#">4</a>	Solenoid - A/C Clutch	<a href="#">H-16</a>	<a href="#">52</a>
Breaker - Glow Plugs	<a href="#">G-13</a>	<a href="#">5</a>	Solenoid - Axle Oil Cooler Clutch	<a href="#">G-16</a>	<a href="#">53</a>
Breaker - Main	<a href="#">H-13</a>	<a href="#">6</a>	Solenoid - Clutch # 3 (Reverse)	<a href="#">I-7</a>	<a href="#">54</a>
Control - Engine	<a href="#">E-16</a>	<a href="#">7</a>	Solenoid - Clutch #1 (Forward Low)	<a href="#">J-7</a>	<a href="#">55</a>
Control - Hood Raise/Lower Motor	<a href="#">H-11</a>	<a href="#">8</a>	Solenoid - Clutch #2 (Forward High)	<a href="#">J-7</a>	<a href="#">56</a>
Glowplugs 1-6	<a href="#">G-16</a>	<a href="#">9</a>	Solenoid - Clutch #4 (Speed #2)	<a href="#">I-7</a>	<a href="#">57</a>
Ground - Engine Block	<a href="#">I-16</a>	<a href="#">10</a>	Solenoid - Clutch #5 (Speed #3)	<a href="#">I-7</a>	<a href="#">58</a>
Ground - Frame	<a href="#">J-11</a>	<a href="#">11</a>	Solenoid - Clutch #6 (Speed #1)	<a href="#">I-7</a>	<a href="#">59</a>
Ground - LH Frame	<a href="#">K-12</a>	<a href="#">12</a>	Solenoid - Differential Lock (Front)	<a href="#">B-10</a>	<a href="#">60</a>
Ground - LH Frame Starter	<a href="#">I-15</a>	<a href="#">13</a>	Solenoid - Differential Lock (Rear)	<a href="#">B-10</a>	<a href="#">61</a>
Ground - Secondary Steering	<a href="#">J-11</a>	<a href="#">14</a>	Solenoid - Differential Lock Actuation	<a href="#">C-10</a>	<a href="#">62</a>
Horn - Forward (938H)	<a href="#">L-2</a>	<a href="#">15</a>	Solenoid - Fan Brake Load Bypass	<a href="#">I-9</a>	<a href="#">63</a>
Horn - Forward (IT38H)	<a href="#">G-1</a>	<a href="#">16</a>	Solenoid - Fan Pump	<a href="#">F-16</a>	<a href="#">64</a>
Motor - Autolube Pump	<a href="#">L-1</a>	<a href="#">17</a>	Solenoid - Fan Valve	<a href="#">F-16</a>	<a href="#">65</a>
Motor - Fuel Priming Pump	<a href="#">G-15</a>	<a href="#">18</a>	Solenoid - Fuel Pump	<a href="#">D-18</a>	<a href="#">66</a>
Motor - Hood Actuator	<a href="#">I-17</a>	<a href="#">19</a>	Solenoid - Implement Pilot Shutoff (938H)	<a href="#">I-2</a>	<a href="#">67</a>
Motor - Secondary Steering	<a href="#">J-10</a>	<a href="#">20</a>	Solenoid - Implement Pilot Shutoff (IT38G)	<a href="#">F-1</a>	<a href="#">68</a>
Motor - Starter	<a href="#">J-15</a>	<a href="#">21</a>	Solenoid - Implement Power Management	<a href="#">A-9</a>	<a href="#">69</a>
Motor - Washer Pump (Front)	<a href="#">K-9</a>	<a href="#">22</a>	Solenoid - Injector 1-6	<a href="#">D-17</a>	<a href="#">70</a>
Motor - Washer Pump (Rear)	<a href="#">K-9</a>	<a href="#">23</a>	Solenoid - Quick Coupler	<a href="#">I-1</a>	<a href="#">71</a>
Relay - Glowplug	<a href="#">G-13</a>	<a href="#">24</a>	Solenoid - Ride Control #1	<a href="#">H-2</a>	<a href="#">72</a>
Relay - Main	<a href="#">H-13</a>	<a href="#">25</a>	Solenoid - Ride Control #2	<a href="#">H-2</a>	<a href="#">73</a>
Resistor - CAN Datalink (Engine)	<a href="#">E-14</a>	<a href="#">26</a>	Solenoid - Start Aid	<a href="#">F-15</a>	<a href="#">74</a>
Sender - Fuel Level	<a href="#">K-12</a>	<a href="#">27</a>	Solenoid - Variable Speed Fan	<a href="#">B-10</a>	<a href="#">75</a>
Sender - Hydraulic Oil Temperature	<a href="#">E-7</a>	<a href="#">28</a>	Solenoid - XMSN Pump Flow Bypass	<a href="#">I-9</a>	<a href="#">76</a>
Sender - Rear Axle Oil Temperature	<a href="#">J-15</a>	<a href="#">29</a>	Suppressor - HVAC Arc	<a href="#">H-16</a>	<a href="#">77</a>
Sender - XMSN Oil Temperature	<a href="#">I-7</a>	<a href="#">30</a>	Suppressor - Quick Coupler Arc	<a href="#">H-1</a>	<a href="#">78</a>
Sensor - Ambient Air Temperature	<a href="#">E-15</a>	<a href="#">31</a>	Suppressor - Secondary Steering Arc	<a href="#">J-10</a>	<a href="#">79</a>
Sensor - Articulation Angle	<a href="#">H-9</a>	<a href="#">32</a>	Switch - A/C Pressure	<a href="#">H-16</a>	<a href="#">80</a>
Sensor - Cam Speed	<a href="#">E-18</a>	<a href="#">33</a>	Switch - Bucket Position (IT38H)	<a href="#">F-1</a>	<a href="#">81</a>
Sensor - Converter Output Speed	<a href="#">J-7</a>	<a href="#">34</a>	Switch - Bucket/Tilt Position (938H)	<a href="#">K-2</a>	<a href="#">82</a>
Sensor - Coolant Temperature	<a href="#">E-18</a>	<a href="#">35</a>	Switch - Case Drain Filter	<a href="#">B-10</a>	<a href="#">83</a>
Sensor - Crank Speed	<a href="#">E-18</a>	<a href="#">36</a>	Switch - Disconnect	<a href="#">J-12</a>	<a href="#">84</a>
Sensor - Front Wheel Speed (LH)	<a href="#">I-1</a>	<a href="#">37</a>	Switch - Fork Position (IT38H)	<a href="#">G-1</a>	<a href="#">85</a>
Sensor - Front Wheel Speed (RH)	<a href="#">I-1</a>	<a href="#">38</a>	Switch - Front Axle Oil Monitoring	<a href="#">J-2</a>	<a href="#">86</a>
Sensor - Fuel Rail Pressure	<a href="#">D-18</a>	<a href="#">39</a>	Switch - Fuel Priming Pump	<a href="#">G-15</a>	<a href="#">87</a>
Sensor - Intake Manifold Pressure	<a href="#">E-18</a>	<a href="#">40</a>	Switch - Ground Level Shutdown	<a href="#">H-11</a>	<a href="#">88</a>
Sensor - Intake Manifold Temperature	<a href="#">E-18</a>	<a href="#">41</a>	Switch - Hood Actuator	<a href="#">H-11</a>	<a href="#">89</a>
Sensor - Lift Cylinder Head End Pressure	<a href="#">K-2</a>	<a href="#">42</a>	Switch - Hydraulic Filter Bypass	<a href="#">C-10</a>	<a href="#">90</a>
Sensor - Lift Position	<a href="#">K-2</a>	<a href="#">43</a>	Switch - Lift Position (938H)	<a href="#">L-2</a>	<a href="#">91</a>
Sensor - Oil Pressure	<a href="#">D-18</a>	<a href="#">44</a>	Switch - Lift Position (IT38H)	<a href="#">H-1</a>	<a href="#">92</a>
Sensor - Output Speed (Leading)	<a href="#">I-7</a>	<a href="#">45</a>	Switch - Low Brake Oil Pressure	<a href="#">C-10</a>	<a href="#">93</a>
Sensor - Output Speed (Trailing)	<a href="#">I-7</a>	<a href="#">46</a>	Switch - Steering Pressure (Primary)	<a href="#">K-9</a>	<a href="#">94</a>
Sensor - Rear Wheel Speed (LH)	<a href="#">L-17</a>	<a href="#">47</a>	Switch - Steering Pressure (Secondary)	<a href="#">K-9</a>	<a href="#">95</a>
Sensor - Rear Wheel Speed (RH)	<a href="#">L-17</a>	<a href="#">48</a>	Switch - XMSN Filter Bypass	<a href="#">C-10</a>	<a href="#">96</a>

# COMPONENT LOCATION

## Volume 2 of 2 - CAB WIRING



Component	Schematic Location	Machine Location	Component	Schematic Location	Machine Location
12V Accessory Outlet	<a href="#">D-11</a>	<a href="#">97</a>	Switch - Beacon	<a href="#">J-6</a>	<a href="#">128</a>
12V Cigar Lighter	<a href="#">G-6</a>	<a href="#">98</a>	Switch - Bucket Fork Select (IT38H)	<a href="#">E-9</a>	<a href="#">129</a>
12V Convertor	<a href="#">D-11</a>	<a href="#">99</a>	Switch - Dimmer	<a href="#">C-3</a>	<a href="#">130</a>
Alarm - Action	<a href="#">J-7</a>	<a href="#">100</a>	Switch - Downshift	<a href="#">I-10</a>	<a href="#">131</a>
Block - Fuse	<a href="#">B-7</a>	<a href="#">101</a>	Switch - Forward Horn	<a href="#">D-3</a>	<a href="#">132</a>
Cluster - Instrument	<a href="#">G-3</a>	<a href="#">102</a>	Switch - Forward Horn (Implement Console)	<a href="#">H-10</a>	<a href="#">133</a>
Control - A/C Temperature	<a href="#">B-9</a>	<a href="#">103</a>	Switch - Hazard Lamps	<a href="#">J-6</a>	<a href="#">134</a>
Control - Payload	<a href="#">L-14</a>	<a href="#">104</a>	Switch - Heater Mirror	<a href="#">J-7</a>	<a href="#">135</a>
Control - Product Link	<a href="#">K-10</a>	<a href="#">105</a>	Switch - HID Lamp	<a href="#">J-6</a>	<a href="#">136</a>
Control - XMSN	<a href="#">G-14</a>	<a href="#">106</a>	Switch - HVAC Blower Fan Speed	<a href="#">C-9</a>	<a href="#">137</a>
Diodes - Turn Signal	<a href="#">E-2</a>	<a href="#">107</a>	Switch - HVAC Select	<a href="#">C-9</a>	<a href="#">138</a>
Display - Autolube	<a href="#">C-11</a>	<a href="#">108</a>	Switch - Hydraulic Metering Unit	<a href="#">I-6</a>	<a href="#">139</a>
Flasher Module	<a href="#">E-2</a>	<a href="#">109</a>	Switch - Implement Lock Out	<a href="#">F-9</a>	<a href="#">140</a>
Ground - Cab #1	<a href="#">H-13</a>	<a href="#">110</a>	Switch - Keystart	<a href="#">D-3</a>	<a href="#">141</a>
Ground - Cab #2	<a href="#">H-13</a>	<a href="#">111</a>	Switch - Lift Tilt Kickout On/Off	<a href="#">E-9</a>	<a href="#">142</a>
Horn - Quick Coupler	<a href="#">B-9</a>	<a href="#">112</a>	Switch - Manual Differential Lock	<a href="#">C-11</a>	<a href="#">143</a>
Joystick - FNR	<a href="#">H-10</a>	<a href="#">113</a>	Switch - Parking Brake Limit	<a href="#">D-11</a>	<a href="#">144</a>
Messenger	<a href="#">G-3</a>	<a href="#">114</a>	Switch - Payload Zero	<a href="#">C-9</a>	<a href="#">145</a>
Motor - Air Seat Compressor	<a href="#">E-11</a>	<a href="#">115</a>	Switch - PCS Clear	<a href="#">I-10</a>	<a href="#">146</a>
Motor - Blower	<a href="#">I-18</a>	<a href="#">116</a>	Switch - Quick Coupler	<a href="#">D-9</a>	<a href="#">147</a>
Motor - Operator Seat Heater Compressor	<a href="#">E-11</a>	<a href="#">117</a>	Switch - Remote FNR	<a href="#">H-10</a>	<a href="#">148</a>
Motor - Wiper (Front)	<a href="#">H-6</a>	<a href="#">118</a>	Switch - Ride Control	<a href="#">F-9</a>	<a href="#">149</a>
Motor - Wiper (Rear)	<a href="#">L-16</a>	<a href="#">119</a>	Switch - Running Lamp	<a href="#">K-6</a>	<a href="#">150</a>
Radio - Product Link	<a href="#">L-10</a>	<a href="#">120</a>	Switch - Stop Lamp	<a href="#">I-6</a>	<a href="#">151</a>
Resistor - CAN Datalink (Cab)	<a href="#">J-8</a>	<a href="#">121</a>	Switch - Thermostat	<a href="#">J-18</a>	<a href="#">152</a>
Resistor - Blower	<a href="#">J-18</a>	<a href="#">122</a>	Switch - Turn Signal	<a href="#">E-2</a>	<a href="#">153</a>
Resistor - CAN Datalink (Payload)	<a href="#">H-14</a>	<a href="#">123</a>	Switch - Wiper Washer (Front)	<a href="#">H-6</a>	<a href="#">154</a>
Sensor - Brake Pedal (LH)	<a href="#">J-1</a>	<a href="#">124</a>	Switch - Wiper Washer (Rear)	<a href="#">G-6</a>	<a href="#">155</a>
Sensor - Throttle Position	<a href="#">D-3</a>	<a href="#">125</a>	Switch - Worklamp	<a href="#">K-6</a>	<a href="#">156</a>
Shifter - XMSN	<a href="#">H-3</a>	<a href="#">126</a>	Valve - Implement Pilot	<a href="#">J-8</a>	<a href="#">157</a>
Suppressor - Arc	<a href="#">E-2</a>	<a href="#">127</a>	Valve - Water	<a href="#">J-18</a>	<a href="#">158</a>

# CONNECTOR LOCATION

## Volume 1 of 2 - ENGINE AND CHASSIS WIRING



Connector Number	Schematic Location
<a href="#">CONN 1</a>	<a href="#">D-17</a>
<a href="#">CONN 2</a>	<a href="#">D-17</a>
<a href="#">CONN 3</a>	<a href="#">D-17</a>
<a href="#">CONN 4</a>	<a href="#">F-15</a>
<a href="#">CONN 5</a>	<a href="#">G-15</a>
<a href="#">CONN 6</a>	<a href="#">K-16</a>
<a href="#">CONN 7</a>	<a href="#">L-16</a>
<a href="#">CONN 8</a>	<a href="#">E-13</a>
<a href="#">CONN 9</a>	<a href="#">E-13</a>
<a href="#">CONN 10</a>	<a href="#">C-9</a>
<a href="#">CONN 11</a>	<a href="#">J-9</a>
<a href="#">CONN 12</a>	<a href="#">E-6</a>
<a href="#">CONN 13</a>	<a href="#">G-6</a>
<a href="#">CONN 14</a>	<a href="#">I-6</a>
<a href="#">CONN 15</a>	<a href="#">G-4, K-4</a>
<a href="#">CONN 16</a>	<a href="#">H-2</a>
<a href="#">CONN 17</a>	<a href="#">H-2</a>
<a href="#">CONN 18</a>	<a href="#">H-2</a>
<a href="#">CONN 19</a>	<a href="#">I-2</a>
<a href="#">CONN 20</a>	<a href="#">J-2</a>
<a href="#">CONN 21</a>	<a href="#">J-2</a>
<a href="#">CONN 22</a>	<a href="#">K-2</a>
<a href="#">CONN 23</a>	<a href="#">D-4, K-2</a>
<a href="#">CONN 24</a>	<a href="#">L-2</a>
<a href="#">CONN 25</a>	<a href="#">D-2</a>
<a href="#">CONN 26</a>	<a href="#">L-2</a>
<a href="#">CONN 27</a>	<a href="#">L-2</a>

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.

# CONNECTOR LOCATION

## Volume 2 of 2 - CAB WIRING



Connector Number	Schematic Location
<a href="#">CONN 12</a>	<a href="#">E-17</a>
<a href="#">CONN 13</a>	<a href="#">F-17</a>
<a href="#">CONN 14</a>	<a href="#">H-17</a>
<a href="#">CONN 15</a>	<a href="#">I-3</a>
<a href="#">CONN 28</a>	<a href="#">J-16</a>
<a href="#">CONN 29</a>	<a href="#">J-15</a>
<a href="#">CONN 30</a> PCS Printer Connector	<a href="#">H-14</a>
<a href="#">CONN 31</a> Autolube Service Connector	<a href="#">C-11</a>
<a href="#">CONN 32</a>	<a href="#">E-11</a>
<a href="#">CONN 33</a>	<a href="#">J-12</a>
<a href="#">CONN 34</a> Service Tool Connector	<a href="#">H-8</a>
<a href="#">CONN 35</a>	<a href="#">K-7</a>
<a href="#">CONN 36</a>	<a href="#">K-7</a>
<a href="#">CONN 37</a>	<a href="#">L-7</a>
<a href="#">CONN 38</a>	<a href="#">E-3</a>

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.

Component Identifiers (CID <sup>1</sup> ) Module Identifier (MID <sup>2</sup> ) Engine Control System (MID No. 036)	
CID	Component
0001	Cylinder #1 Injector
0002	Cylinder #2 Injector
0003	Cylinder #3 Injector
0004	Cylinder #4 Injector
0005	Cylinder #5 Injector
0006	Cylinder #6 Injector
0041	8 Volt DC Supply
0091	Throttle Position Sensor
0100	Engine Oil Pressure Sensor
0110	Engine Coolant Temperature Sensor
0168	Battery Voltage
0171	Ambient Air Temperature Sensor
0172	Intake Air Temp Sensor
0190	Engine Speed Sensor
0253	Personality Module
0261	Engine Timing Calibration
0262	5V DC Sensor Supply
0267	Remote Shutdown Input
0268	Programed Parameter Fault
0291	Engine Cooling Fan Solenoid
0296	Transmission Control
0342	Sec Engine Speed Sensor
0526	Turbo Wastegate Actuator
1438	Engine Cooling Fan Solenoid #2
1639	Mach Sec System ECM
1779	Fuel Rail Pressure Valve Solenoid
1785	Intake Manifold Pressure Sensor
1797	Fuel Rail Pressure Sensor
1834	Ignition Key Switch
1849	Engine Fan Reverse Relay
2246	Glow Plug Start Aid Relay

<sup>1</sup> The CID is a diagnostic code that indicates which circuit is faulty.

<sup>2</sup> The MID is a diagnostic code that indicates which electronic control module diagnosed the fault.

Failure Mode Identifiers (FMI) <sup>1</sup>	
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.
14	Parameter failures.
15	Parameter failures.
16	Parameter not available.
17	Module not responding.
18	Sensor supply fault.
19	Condition not met.
20	Parameter failures.

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

Event Codes Engine Control	
Event Code	Condition
0194	High Exhaust Temperature
0265	User Defined Shutdown
0360	Low Engine Oil Pressure
0361	High Engine Coolant Temperature
0362	Engine Overspeed
0396	High Fuel Rail Pressure
0398	Low Fuel Rail Pressure
0441	Idle Elevated to Increase Batt Voltage
0539	High Intake Manifold Air Temperature
1044	High Intake Manifold Pressure
1045	Low Intake Manifold Pressure
Event Codes Machine Control	
0049	Coasting in Neutral Warning
0284	Low Brake Accumulator Pressure
0329	Transmission Filter Plugged
0454	Hydraulic Case Drain Filter Plugged
0490	Park Brake On - Not In Neutral
0627	Parking Brake On - Machine In Motion
0861	Clock Manual Alignment Required
0878	High Hydraulic Oil Temp
0879	Hydraulic Tank Oil Filter Plugged
2129	High Front Axle Temp
2130	High Rear Axle Temp
Event Codes Payload Control	
0643	Zero Timer Expired
0782	Lift Pressure Change During Weigh
0783	Machine Pitched or Bucket Tilted
0784	Weight too heavy to zero
1027	Lift Too Slow To Weigh
1028	Lift Stopped During Weigh
1042	Excessive Lift Speed Change
1043	Lift Too Jerky During Weigh
2083	Payload Memory Low
2138	Payload Memory Full
Event Codes Product Link Control	
0861	Manual Clock Alignment Required



# CID / MID / FMI

## Volume 2 of 2 - CAB WIRING



Component Identifiers (CID) <sup>1</sup>	
Module Identifier (MID <sup>2</sup> )	
Payload Control System (MID No. 074)	
CID	Component
0168	Electrical System Voltage
0254	Payload Electronic Control Module
0350	Lift Linkage Position Sensor
0364	Head End Lift Cylinder Pressure Sensor
0769	Rod End Lift Cylinder Pressure Sensor
0817	Internal Backup Battery
0820	Keypad Data Link
Electronic Transmission Control System (MID No. 081)	
CID	Component
0070	Parking Brake Switch
0149	Ride Control Solenoid 2
0168	Electrical System Voltage
0190	Engine Speed Sensor
0248	CAT Data Link
0356	Tilt Dump Solenoid 1
0363	Ride Control Solenoid 1
0367	Ride Control Switch
0368	Transmission Auto/Manual Switch
0596	Implement ECM
0621	Downshift Switch
0622	Upshift Switch
0623	Directional Switch
0631	Transmission Clutch 1 Solenoid
0632	Transmission Clutch 2 Solenoid
0633	Transmission Clutch 3 Solenoid
0634	Transmission Clutch 4 Solenoid
0635	Transmission Clutch 5 Solenoid
0636	Transmission Clutch 6 Solenoid
0638	Starter Solenoid
0650	Harness Code
0671	Transmission Output Speed Sensor
0687	Options ID Code
1521	Part-Throttle Autoshift Selector Switch
Engine Control System (MID No. 036)	
CID	Component
0001	Cylinder #1 Injector
0002	Cylinder #2 Injector
0003	Cylinder #3 Injector
0004	Cylinder #4 Injector
0005	Cylinder #5 Injector
0006	Cylinder #6 Injector
0041	8 Volt DC Supply
0091	Throttle Position Sensor
0100	Engine Oil Press Sensor
0110	Eng coolant temp sensor
0168	Battery Voltage
0172	Intake Air Temp Sensor
0190	Engine Speed Sensor
0253	Personality Module
0261	Engine Timing Cal
0262	5 VDC Sensor Supply
0267	Remote shutdown input
0268	Programd Param. Fault
0291	Eng Cooling Fan Sol.
0296	Transmission Control
0342	Sec Eng Spd Sensor
0526	Turbo Wastegate Act.
1639	Mach Sec System ECM
1779	Fuel Rail Pres Val Sol
1785	Intake Manifold Pres Sensr
1797	Fuel Rail Pres Sensr
1834	Ignition Key Switch
2246	Glow Plug Start Aid Relay

<sup>1</sup> The CID is a diagnostic code that indicates which circuit is faulty.

<sup>2</sup> The MID is a diagnostic code that indicates which electronic control module diagnosed the fault.

Failure Mode Identifiers (FMI) <sup>1</sup>	
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.
14	Parameter failures.
15	Parameter failures.
16	Parameter not available.
17	Module not responding.
18	Sensor supply fault.
19	Condition not met.
20	Parameter failures

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

Event Codes Engine Control	
Event Code	Condition
0194	High Exhaust Temperature
0265	User Defined Shutdown
0360	Low Engine Oil Pressure
0361	High Engine Coolant Temperature
0362	Engine Overspeed
0396	High Fuel Rail Pressure
0398	Low Fuel Rail Pressure
0441	Idle Elevated to Increase Batt Voltage
0539	High Intake Manifold Air Temperature
1044	High Intake Manifold Pressure
1045	Low Intake Manifold Pressure
Event Codes Machine Control	
0049	Coasting in Neutral Warning
0284	Low Brake Accumulator Pressure
0329	Transmission Filter Plugged
0454	Hydraulic Case Drain Filter Plugged
0490	Park Brake On - Not In Neutral
0627	Parking Brake On - Machine In Motion
0861	Clock Manual Alignment Required
0878	High Hydraulic Oil Temp
0879	Hydraulic Tank Oil Filter Plugged
2129	High Front Axle Temp
2130	High Rear Axle Temp
Event Codes Payload Control	
0643	Zero Timer Expired
0782	Lift Pressure Change During Weigh
0783	Machine Pitched or Bucket Tilted
0784	Weight too heavy to zero
1027	Lift Too Slow To Weigh
1028	Lift Stopped During Weigh
1042	Excessive Lift Speed Change
1043	Lift Too Jerky During Weigh
2083	Payload Memory Low
2138	Payload Memory Full
Event Codes Product Link Control	
0861	Manual Clock Alignment Required



# SPECIFICATIONS AND RELATED MANUALS

## Volume 1 of 2 - ENGINE AND CHASSIS WIRING



### Volume 1 - Off Machine Switch Specification

Part No.	Function	Actuate	Deactuate	Contact Position
114-5333	A/C (High/Low) Pressure	275 to 1750 kPa <sup>1</sup> (39.9 to 253.8 psi)	- -	Normally Open <sup>2</sup>
313-5104	Primary & Secondary Steering Pressure	1,200 kPa MAX (174 psi MAX)	700 ± 100 kPa (102 ± 14.5 psi)	A-B Normally Open A-C Normally Closed
314-2405	Low Brake Oil Pressure	10,700 kPa MAX (1552 psi MAX)	8,960 ± 537 kPa (1300 ± 78 psi)	A-B Normally Open A-C Normally Closed

<sup>1</sup> 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).

<sup>2</sup> Contact position at the contacts of the harness connector.

### Related Electrical Service Manuals

Title	Form Number
Alternator: 235-7132 (65A) Std 235-7133 (80A) Atch	SENR4130
Engine Control System:	KENR5392
Machine Control System:	RENr8999
Machine Monitoring System:	RENr6319
Payload Control System:	SENR6614

# SPECIFICATIONS AND RELATED MANUALS

## Volume 2 of 2 - CAB WIRING



Volume 2 - Resistor, Sender and Solenoid Specifications		
Part No.	Component Description	Resistance (Ohms) <sup>1</sup>
134-2540	Resistor: Engine CAN Data Link	120 ± 10
148-3551	Solenoid: Demand Fan Shutoff	32.6 ± 1.6
174-4916	Solenoid: Differential Lock Actuation	8.7 ± 0.4 @ 25°C (77°F)
183-5106	Solenoid: A/C Clutch	17.6 ± 0.6
239-1134	Solenoid: Start Aid	20
241-5895	Solenoid: Rear Differential Lock Front Differential Lock Implement Pilot Shutoff	35 ± 0.5
244-3114	Solenoid: Transmission Clutch #1 (Forward High) Transmission Clutch #1 (Forward Low) Transmission Clutch #1 (Reverse) Transmission Clutch #1 (Speed #1) Transmission Clutch #1 (Speed #2) Transmission Clutch #1 (Speed #3)	8.7 ± 0.4
244-8686	Solenoid: Ride Control #1 Ride Control #1	25 ± 5°C (77 ± 41°F)
266-0298	Sender: Fuel Level	Empty: 240 - 250 Full: 28 - 33
285-5730	Solenoid: Variable Fan Speed Implement Power Management	5 ± 0.3 @ 25°C (77°F)
297-1860	Solenoid: Axle Oil Cooler	9.4 ± 5 @ 20°C (68°F)

<sup>1</sup> At room temperature unless otherwise noted.

Volume 2 - Off Machine Switch Specification				
Part No.	Function	Actuate	Deactuate	Contact Position
3E-5464	Thermostat	-1.1 ± 0.8 °C (30 ± 1.4 °F)	2.2 ± 0.8 °C (36 ± 1.4 °F)	Normally Closed

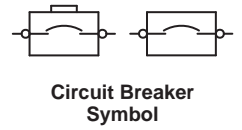
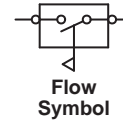
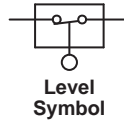
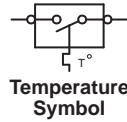
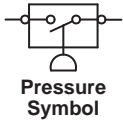
Related Electrical Service Manuals		
Title	Form Number	
Alternator:	235-7132 (65A) Std 235-7133 (80A) Atch	SENR4130
Engine Control System:	KENR5392	
Machine Control System:	RENR8999	
Machine Monitoring System:	RENR6319	
Payload Control System:	SENR6614	

# HARNESS and WIRE

## Electrical Schematic Symbols



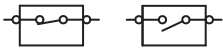
### Symbols



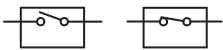
### Symbols and Definitions



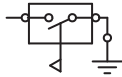
**Fuse:** A component in an electrical circuit that will open the circuit if too much current flows through it.



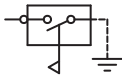
**Switch (Normally Open):** A switch that will close at a specified point (temp, press, etc.). The circle indicates that the component has screw terminals and a wire can be disconnected from it.



**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.



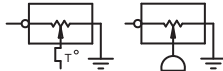
**Ground (Wired):** This indicates that the component is connected to a grounded wire. The grounded wire is fastened to the machine.



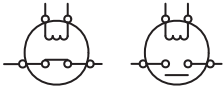
**Ground (Case):** This indicates that the component does not have a wire connected to ground. It is grounded by being fastened to the machine.



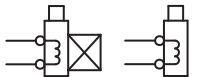
**Reed Switch:** A switch whose contacts are controlled by a magnet. A magnet closes the contacts of a normally open reed switch; it opens the contacts of a normally closed reed switch.



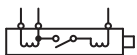
**Sender:** A component that is used with a temperature or pressure gauge. The sender measures the temperature or pressure. Its resistance changes to give an indication to the gauge of the temperature or pressure.



**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.



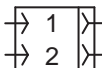
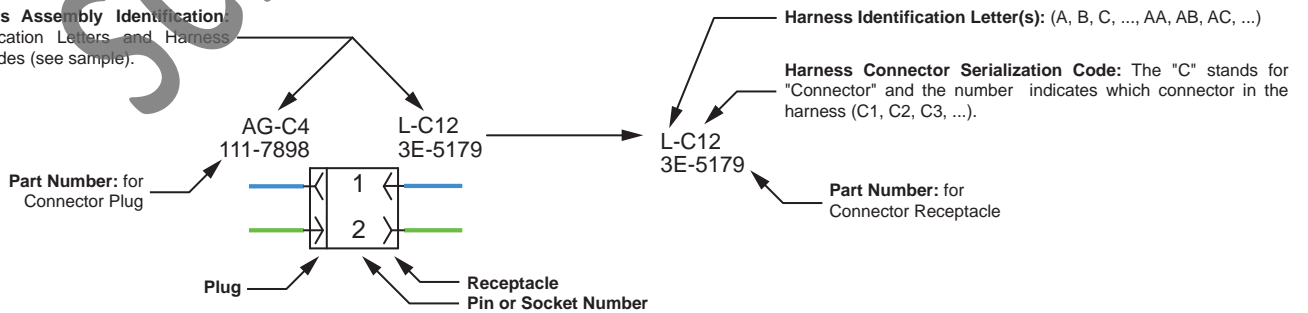
**Solenoid:** A solenoid is an electrical component that is activated by electricity. It has a coil that makes an electromagnet when current flows through it. The electromagnet can open or close a valve or move a piece of metal that can do work.



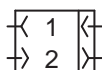
**Magnetic Latch Solenoid:** A magnetic latch solenoid is an electrical component that is activated by electricity and held latched by a permanent magnet. It has two coils (latch and unlatch) that make electromagnet when current flows through them. It also has an internal switch that places the latch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

### Harness and Wire Symbols

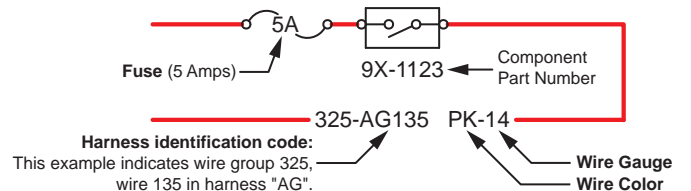
**Wire, Cable, or Harness Assembly Identification:** Includes Harness Identification Letters and Harness Connector Serialization Codes (see sample).



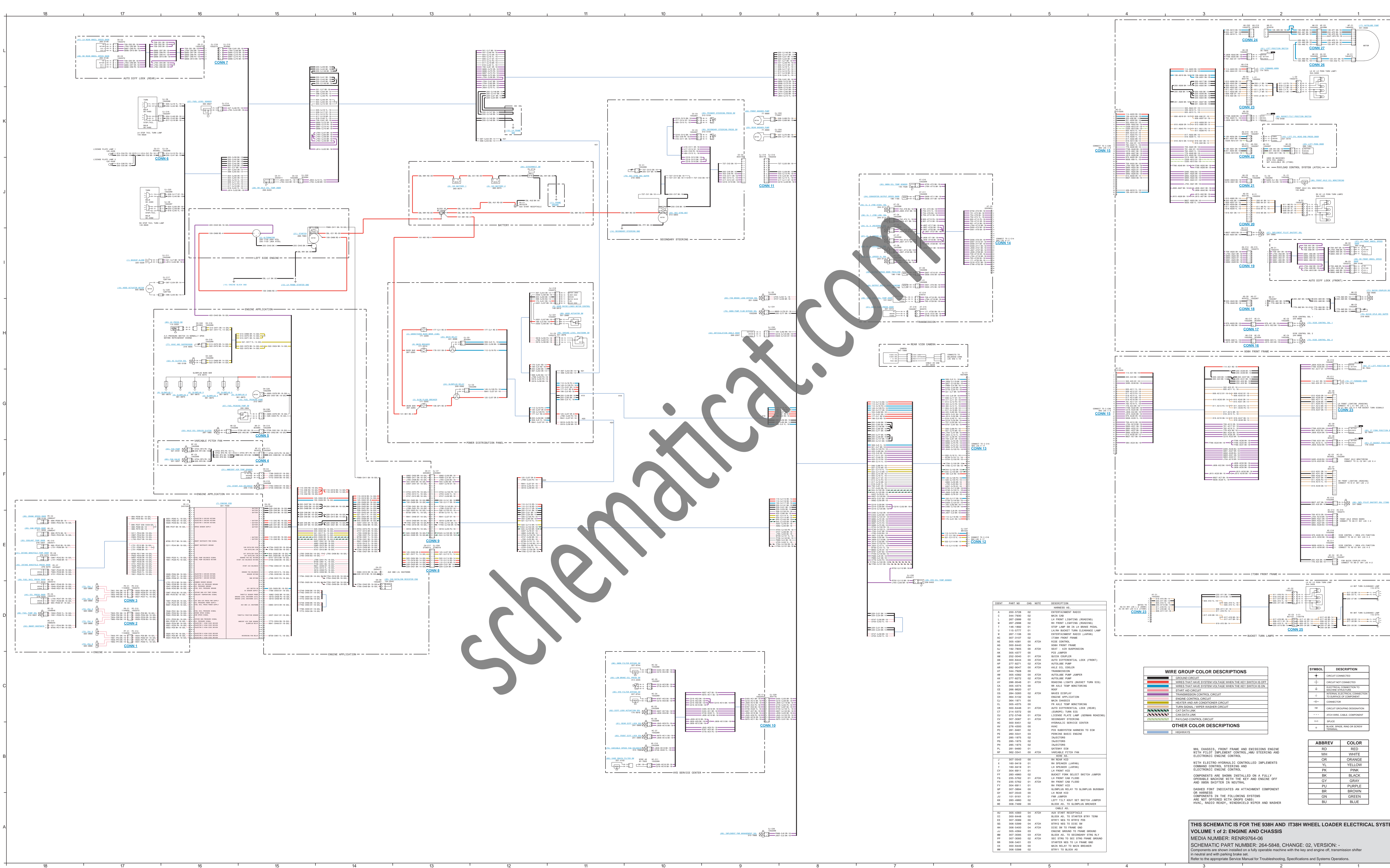
**Deutsch connector:** Typical representation of a Deutsch connector. The plug contains all sockets and the receptacle contains all pins.



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







SchematicCat.com

IDENT	PART NO.	QTY	DESCRIPTION
A	264-5726	02	ENTERTAINMENT RADIO
C	264-7960	02	BEIN CAB
L	267-2869	02	LH FRONT LIGHTING (HEADING)
R	267-2868	02	RH FRONT LIGHTING (HEADING)
T	145-1892	01	STOP LAMP SW ON LH SEAT PEDAL
W	175-9777	01	LAUNCH RESET PARK CLEARANCE LAMP
W	267-1106	02	ENTERTAINMENT RADIO (JAPAN)
AC	260-9197	02	STEERING FRAME
AE	360-4341	01	ATM
AD	260-4640	01	BEIN FRONT FRAME
AD	160-7860	01	BEIN ADJ. COIL SPRING
AK	360-4377	01	ATM
AK	360-4388	01	ATM
AM	360-5444	01	ATM
AM	360-5445	01	ATM
AM	360-5447	01	ATM
AM	360-5448	01	ATM
AM	360-5449	01	ATM
AM	360-5450	01	ATM
AM	360-5451	01	ATM
AM	360-5452	01	ATM
AM	360-5453	01	ATM
AM	360-5454	01	ATM
AM	360-5455	01	ATM
AM	360-5456	01	ATM
AM	360-5457	01	ATM
AM	360-5458	01	ATM
AM	360-5459	01	ATM
AM	360-5460	01	ATM
AM	360-5461	01	ATM
AM	360-5462	01	ATM
AM	360-5463	01	ATM
AM	360-5464	01	ATM
AM	360-5465	01	ATM
AM	360-5466	01	ATM
AM	360-5467	01	ATM
AM	360-5468	01	ATM
AM	360-5469	01	ATM
AM	360-5470	01	ATM
AM	360-5471	01	ATM
AM	360-5472	01	ATM
AM	360-5473	01	ATM
AM	360-5474	01	ATM
AM	360-5475	01	ATM
AM	360-5476	01	ATM
AM	360-5477	01	ATM
AM	360-5478	01	ATM
AM	360-5479	01	ATM
AM	360-5480	01	ATM
AM	360-5481	01	ATM
AM	360-5482	01	ATM
AM	360-5483	01	ATM
AM	360-5484	01	ATM
AM	360-5485	01	ATM
AM	360-5486	01	ATM
AM	360-5487	01	ATM
AM	360-5488	01	ATM
AM	360-5489	01	ATM
AM	360-5490	01	ATM
AM	360-5491	01	ATM
AM	360-5492	01	ATM
AM	360-5493	01	ATM
AM	360-5494	01	ATM
AM	360-5495	01	ATM
AM	360-5496	01	ATM
AM	360-5497	01	ATM
AM	360-5498	01	ATM
AM	360-5499	01	ATM
AM	360-5500	01	ATM
AM	360-5501	01	ATM
AM	360-5502	01	ATM
AM	360-5503	01	ATM
AM	360-5504	01	ATM
AM	360-5505	01	ATM
AM	360-5506	01	ATM
AM	360-5507	01	ATM
AM	360-5508	01	ATM
AM	360-5509	01	ATM
AM	360-5510	01	ATM
AM	360-5511	01	ATM
AM	360-5512	01	ATM
AM	360-5513	01	ATM
AM	360-5514	01	ATM
AM	360-5515	01	ATM
AM	360-5516	01	ATM
AM	360-5517	01	ATM
AM	360-5518	01	ATM
AM	360-5519	01	ATM
AM	360-5520	01	ATM
AM	360-5521	01	ATM
AM	360-5522	01	ATM
AM	360-5523	01	ATM
AM	360-5524	01	ATM
AM	360-5525	01	ATM
AM	360-5526	01	ATM
AM	360-5527	01	ATM
AM	360-5528	01	ATM
AM	360-5529	01	ATM
AM	360-5530	01	ATM
AM	360-5531	01	ATM
AM	360-5532	01	ATM
AM	360-5533	01	ATM
AM	360-5534	01	ATM
AM	360-5535	01	ATM
AM	360-5536	01	ATM
AM	360-5537	01	ATM
AM	360-5538	01	ATM
AM	360-5539	01	ATM
AM	360-5540	01	ATM
AM	360-5541	01	ATM
AM	360-5542	01	ATM
AM	360-5543	01	ATM
AM	360-5544	01	ATM
AM	360-5545	01	ATM
AM	360-5546	01	ATM
AM	360-5547	01	ATM
AM	360-5548	01	ATM
AM	360-5549	01	ATM
AM	360-5550	01	ATM
AM	360-5551	01	ATM
AM	360-5552	01	ATM
AM	360-5553	01	ATM
AM	360-5554	01	ATM
AM	360-5555	01	ATM
AM	360-5556	01	ATM
AM	360-5557	01	ATM
AM	360-5558	01	ATM
AM	360-5559	01	ATM
AM	360-5560	01	ATM
AM	360-5561	01	ATM
AM	360-5562	01	ATM
AM	360-5563	01	ATM
AM	360-5564	01	ATM
AM	360-5565	01	ATM
AM	360-5566	01	ATM
AM	360-5567	01	ATM
AM	360-5568	01	ATM
AM	360-5569	01	ATM
AM	360-5570	01	ATM
AM	360-5571	01	ATM
AM	360-5572	01	ATM
AM	360-5573	01	ATM
AM	360-5574	01	ATM
AM	360-5575	01	ATM
AM	360-5576	01	ATM
AM	360-5577	01	ATM
AM	360-5578	01	ATM
AM	360-5579	01	ATM
AM	360-5580	01	ATM
AM	360-5581	01	ATM
AM	360-5582	01	ATM
AM	360-5583	01	ATM
AM	360-5584	01	ATM
AM	360-5585	01	ATM
AM	360-5586	01	ATM
AM	360-5587	01	ATM
AM	360-5588	01	ATM
AM	360-5589	01	ATM
AM	360-5590	01	ATM
AM	360-5591	01	ATM
AM	360-5592	01	ATM
AM	360-5593	01	ATM
AM	360-5594	01	ATM
AM	360-5595	01	ATM
AM	360-5596	01	ATM
AM	360-5597	01	ATM
AM	360-5598	01	ATM
AM	360-5599	01	ATM
AM	360-5600	01	ATM

WIRE GROUP COLOR DESCRIPTIONS	
[Red]	GROUND CIRCUIT
[Orange]	WIRES THAT HAVE SYSTEM VOLTAGE WHEN THE KEY SWITCH IS OFF
[Yellow]	WIRES THAT HAVE SYSTEM VOLTAGE WHEN THE KEY SWITCH IS ON
[Green]	START AIR CIRCUIT
[Blue]	REVERSE ENGINE CONNECTION (TO TURNER OF COMPONENT)
[Purple]	TRANSMISSION CONTROL CIRCUIT
[Pink]	ENGINE CONTROL CIRCUIT
[Brown]	HEATER AND AIR CONDITIONING CIRCUIT
[Black]	TURNS SIGNAL, WIPER WASH/WASHER CIRCUIT
[Grey]	CONNECTION
[White]	GROUNDING DISPOSITION
[Diagonal Lines]	ATTACH WIRE CABLE COMPONENT
[Dotted]	SPACE
[Cross-hatch]	BEIN FRONT FRAME OR BODY
[Vertical Lines]	TERMINAL

OTHER COLOR DESCRIPTIONS	
[Red]	HIGHWAYS

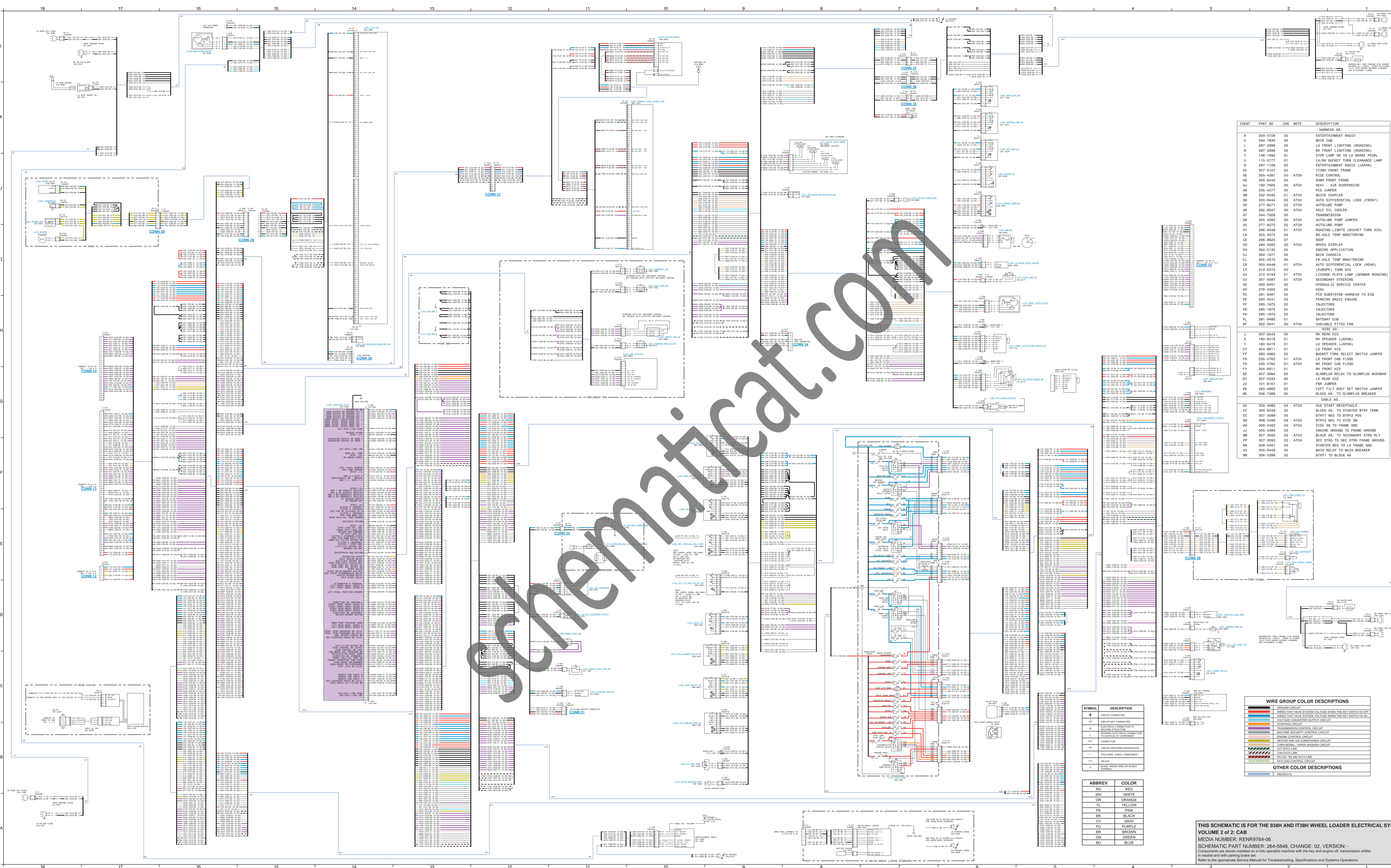
SYMBOL	DESCRIPTION
[+]	CIRCUIT CONNECTED
[-]	CIRCUIT NOT CONNECTED
[+/-]	REVERSE CONNECTION TO TURNER OF COMPONENT
[+/-]	REVERSE ENGINE CONNECTION (TO TURNER OF COMPONENT)
[+/-]	ATTACH WIRE CABLE COMPONENT
[+/-]	SPACE
[+/-]	BEIN FRONT FRAME OR BODY
[+/-]	TERMINAL

ABBREV	COLOR
WH	WHITE
OR	ORANGE
PK	PINK
BK	BLACK
GY	GRAY
PU	PURPLE
BR	BROWN
GRN	GREEN
BLU	BLUE

THIS SCHEMATIC IS FOR THE 938H AND IT38H WHEEL LOADER ELECTRICAL SYSTEM  
 VOLUME 1 of 2: ENGINE AND CHASSIS  
 MEDIA NUMBER: RENR9764-06  
 SCHEMATIC PART NUMBER: 264-5848, CHANGE: 02, VERSION: -  
 Components are shown installed on a fully operable machine with the key and engine off.  
 Refer to the appropriate Service Manual for Troubleshooting, Specifications and System Operations.





IDENT	PART NO	QTY	NOTE	DESCRIPTION
HARNES AS.				
A	200-5728	02		ENTERTAINMENT RADIO
C	344-7930	02		MAIN CAB
L	287-2999	02		LH FRONT LIGHTING (ROADING)
M	287-2998	02		RH FRONT LIGHTING (ROADING)
O	146-1892	01		STOP LAMP SW IN LH BRAKE PEDAL
U	115-5777	01		LH/RH BUCKET TURN CLEARANCE LAMP
W	267-1108	00		ENTERTAINMENT RADIO (JAPAN)
AG	305-6440	04		ESOM FRONT FRAME
AE	305-4381	00	ATCH	RISE CONTROL
AD	305-6440	04		ESOM FRONT FRAME
AJ	192-7805	00	ATCH	SEAT - AIR SUSPENSION
AK	305-4377	00		PCS JUMPER
AB	252-0540	01		GEAR COUPLER
AN	300-6444	00	ATCH	AUTO DIFFERENTIAL LOCK (FRONT)
AP	277-8271	02	ATCH	AUTOLUBE PUMP
AR	282-2047	02	ATCH	AXLE OIL COOLER
AT	344-7928	00		TRANSMISSION
AW	305-4382	00	ATCH	AUTOLUBE PUMP JUMPER
AX	277-8272	02	ATCH	AUTOLUBE PUMP
AY	286-9546	01	ATCH	ROADING LIGHTS (BUCKET TURN SIG)
CA	305-4374	00		RH AXLE TEMP MONITORING
CE	266-8620	07		ROOF
CG	284-3289	02	ATCH	WAVES DISPLAY
CH	364-6192	02		ENGINE APPLICATION
CJ	364-1971	00		MAIN CHASSIS
CL	305-5375	00		FR AXLE TEMP MONITORING
CR	300-6444	01	ATCH	AUTO DIFFERENTIAL LOCK (REAR)
CT	214-5372	00		(EUROPE) TURN SIG
CU	272-5749	01	ATCH	BUCKET PINK SELECT SWITCH JUMPER
CV	307-3087	01	ATCH	SECONDARY STEERING
HC	300-6451	02		HYDRAULIC SERVICE CENTER
HV	278-4090	00		FRAC
PC	281-9481	02		PCS SUBSYSTEM HARNESS TO ECM
PE	285-5541	03		FORMING BASIC ENGINE
PF	285-1975	02		INJECTORS
PG	285-1975	02		INJECTORS
PH	285-1975	02		INJECTORS
PI	281-9480	01		GATEWAY ECM
RF	362-3341	00	ATCH	VARIBLE PITCH FAN
WIRE AS.				
J	307-0543	00		RH REAR HID
K	160-9419	01		RH SPEAKER (JAPAN)
L	160-9419	01		LH SPEAKER (JAPAN)
CG	304-6911	01		LH FRONT HID
FF	283-6960	02		BUCKET PINK SELECT SWITCH JUMPER
FG	235-5762	01	ATCH	LH FRONT CAB FLOOD
FH	235-5762	01	ATCH	RH FRONT CAB FLOOD
FT	304-6911	01		RH FRONT HID
GP	307-3894	00		GLONPLUS RELAY TO GLONPLUS BUSBAR
GV	307-0543	00		LH REAR HID
JU	151-9161	01		PAR JUMPER
KK	283-4060	02		LEFT TILT KOUT SET SWITCH JUMPER
ME	308-7489	00		BLOCK AS. TO GLONPLUS BREAKER
CABLE AS.				
AU	365-4383	04	ATCH	AUX START RECEPTACLE
CU	300-6448	02		BLOCK AS. TO STARTER BTRY TERM
EE	307-3089	00		BTRY NEG TO BTRY POS
GG	306-5099	04	ATCH	BTRY NEG TO DISC SW
HH	305-6400	04	ATCH	DISC SW TO FRAME GND
JJ	305-4384	03		ENGINE GROUND TO FRAME GROUND
MM	307-3095	03	ATCH	BLOCK AS. TO SECONDARY STRS RLY
PP	307-3095	02	ATCH	SEC STRS TO SEC STRS FRAME GROUND
RR	306-5401	03		STARTER NEG TO LH FRAME GND
XX	300-6448	02		MAIN RELAY TO MAIN BREAKER
WW	300-6448	02		BTRY TO BLOCK AS

SYMBOL	DESCRIPTION
+	GROUND CONNECTED
+	CIRCUIT NOT CONNECTED
+	WIRING STRUCTURE
+	SYSTEM ELECTRICAL CONNECTION
+	SEPARATE COMPONENT
+	CONNECTION
+	CIRCUIT GROUNDING DESIGNATION
+	200 WIRE CABLE COMPONENT
+	SPLICE
+	WIRE, WIRE, WIRE OR BATTERY
+	BATTERY

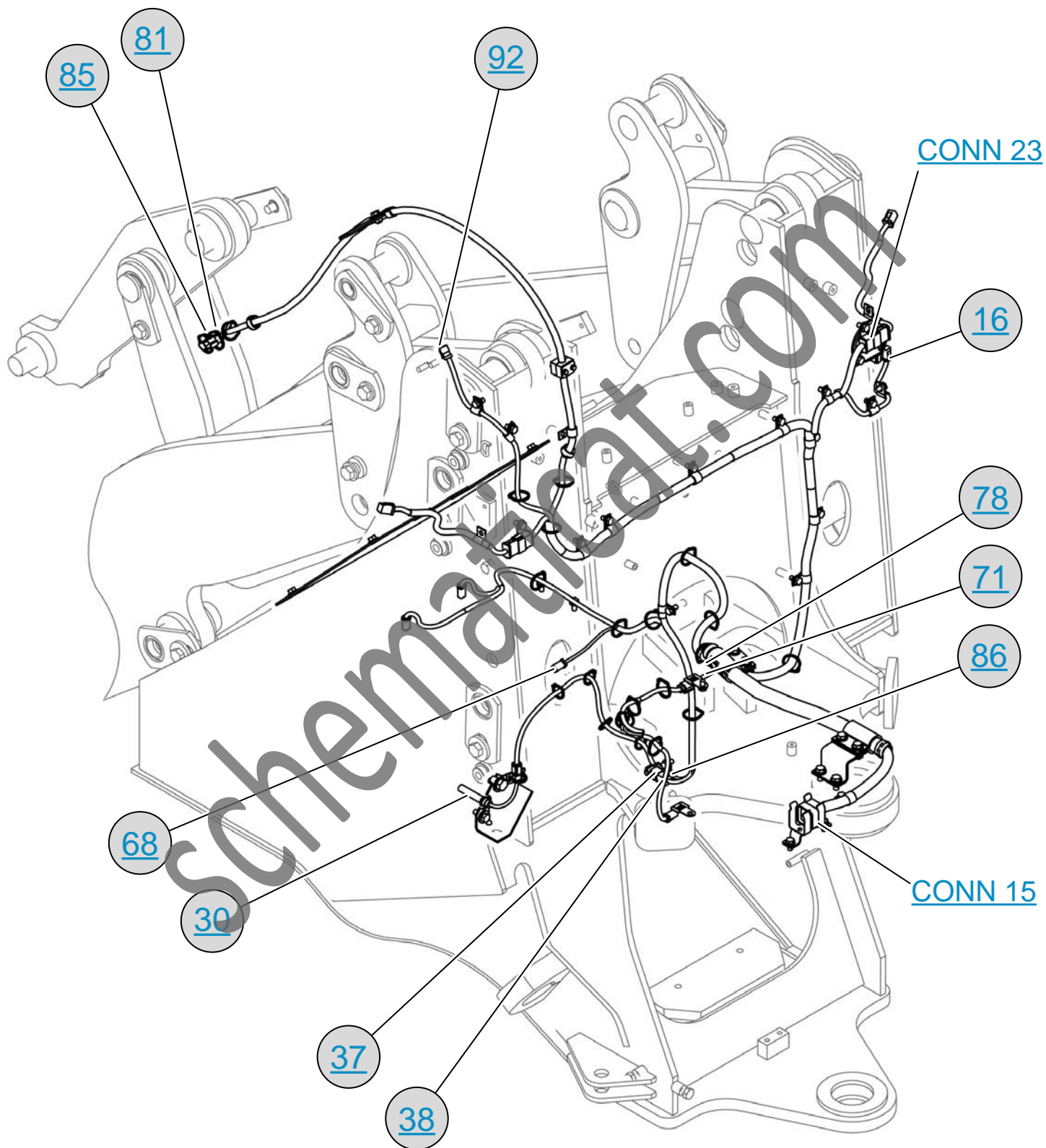
WIRE GROUP COLOR DESCRIPTIONS	
[Color]	GROUND CIRCUIT
[Color]	WIRES THAT HAVE SYSTEM VOLTAGE WHEN THE KEY SWITCH IS OFF
[Color]	WIRES THAT HAVE SYSTEM VOLTAGE WHEN THE KEY SWITCH IS ON
[Color]	VOLTAGE CONVERTER OUTPUT CIRCUIT
[Color]	STARTING CIRCUIT
[Color]	TRANSMISSION CONTROL CIRCUIT
[Color]	MACHINE RELAY CONTROL CIRCUIT
[Color]	ENGINE CONTROL CIRCUIT
[Color]	HEATER AND AIR CONDITIONER CIRCUIT
[Color]	TURN SIGNAL WIPER WASHER CIRCUIT
[Color]	CAN DATA LINK
[Color]	CAN DATA LINK
[Color]	PAVING CONTROL CIRCUIT

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

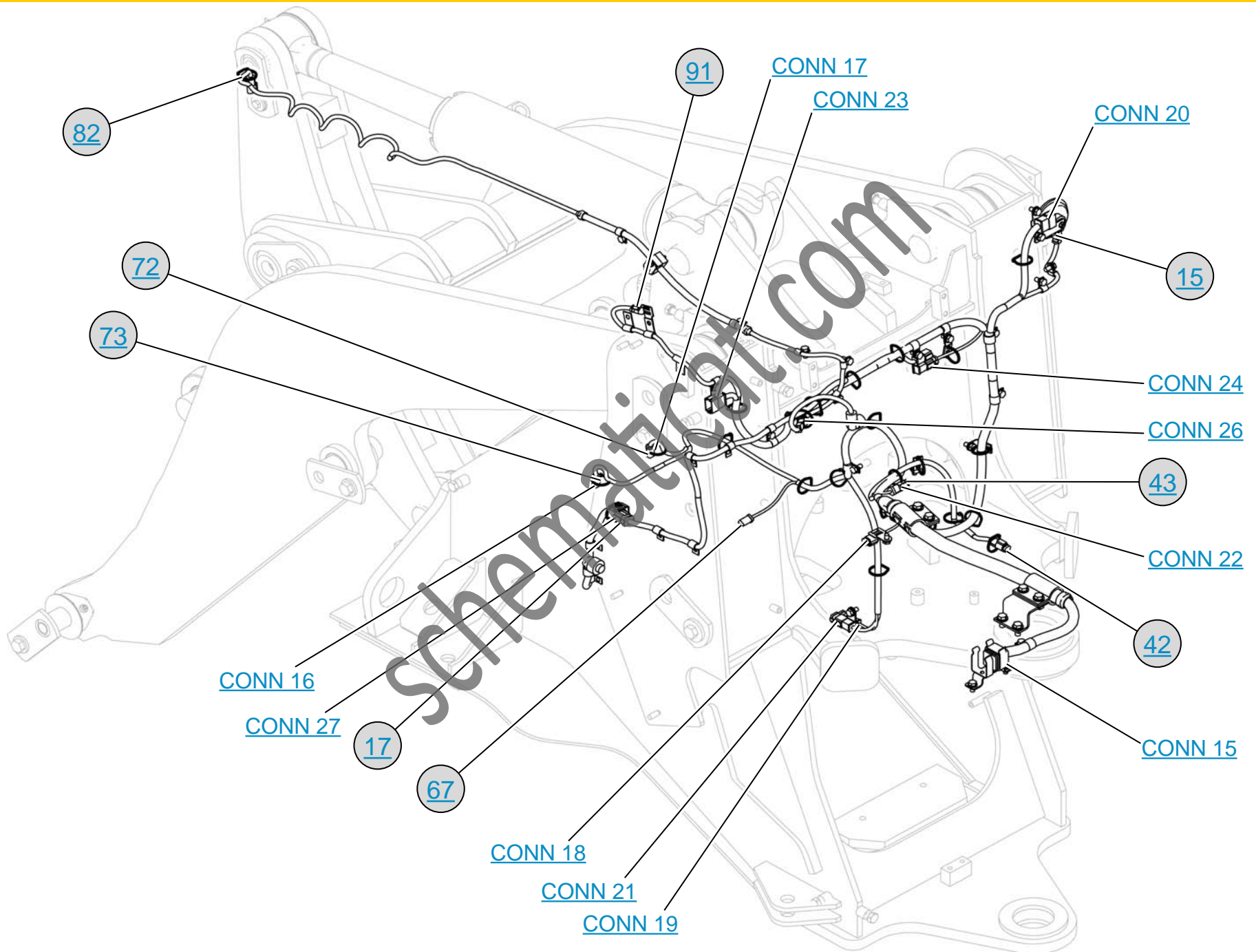
THIS SCHEMATIC IS FOR THE 938H AND IT38H WHEEL LOADER ELECTRICAL SYSTEM  
 VOLUME 2 of 2: CAB  
 MEDIA NUMBER: RENR9764-06  
 SCHEMATIC PART NUMBER: 264-5846, CHANGE: 02, VERSION: 1  
 Components are shown installed on a typical machine with the key and engine off, transmission shifter in neutral and with parking brake set.  
 Refer to the appropriate Service Manual for Troubleshooting, Specifications and Systems Operations.



# (AC) HARNESS - IT38H FRONT FRAME

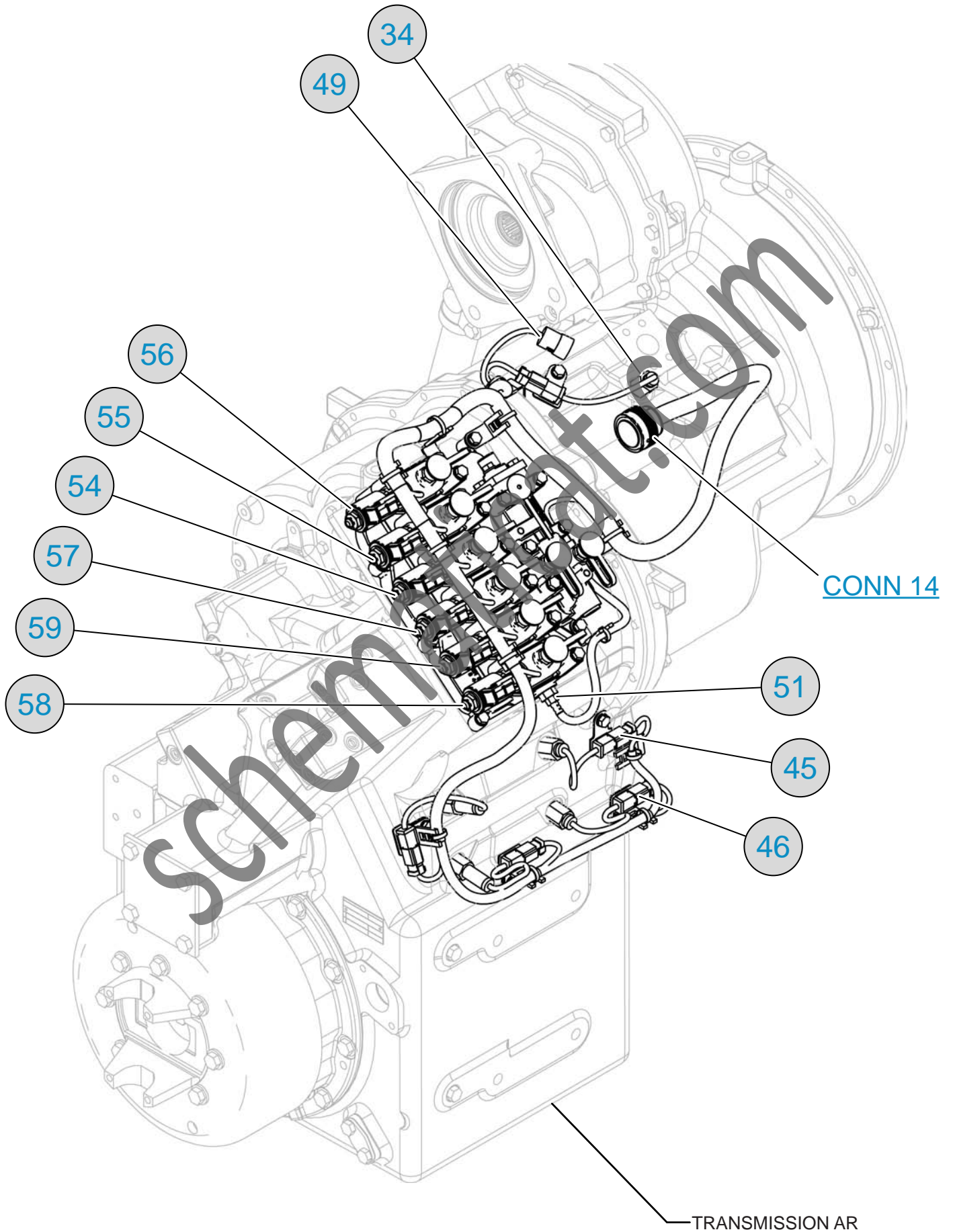


# (AG) HARNESS - 938H FRONT FRAME CHASSIS

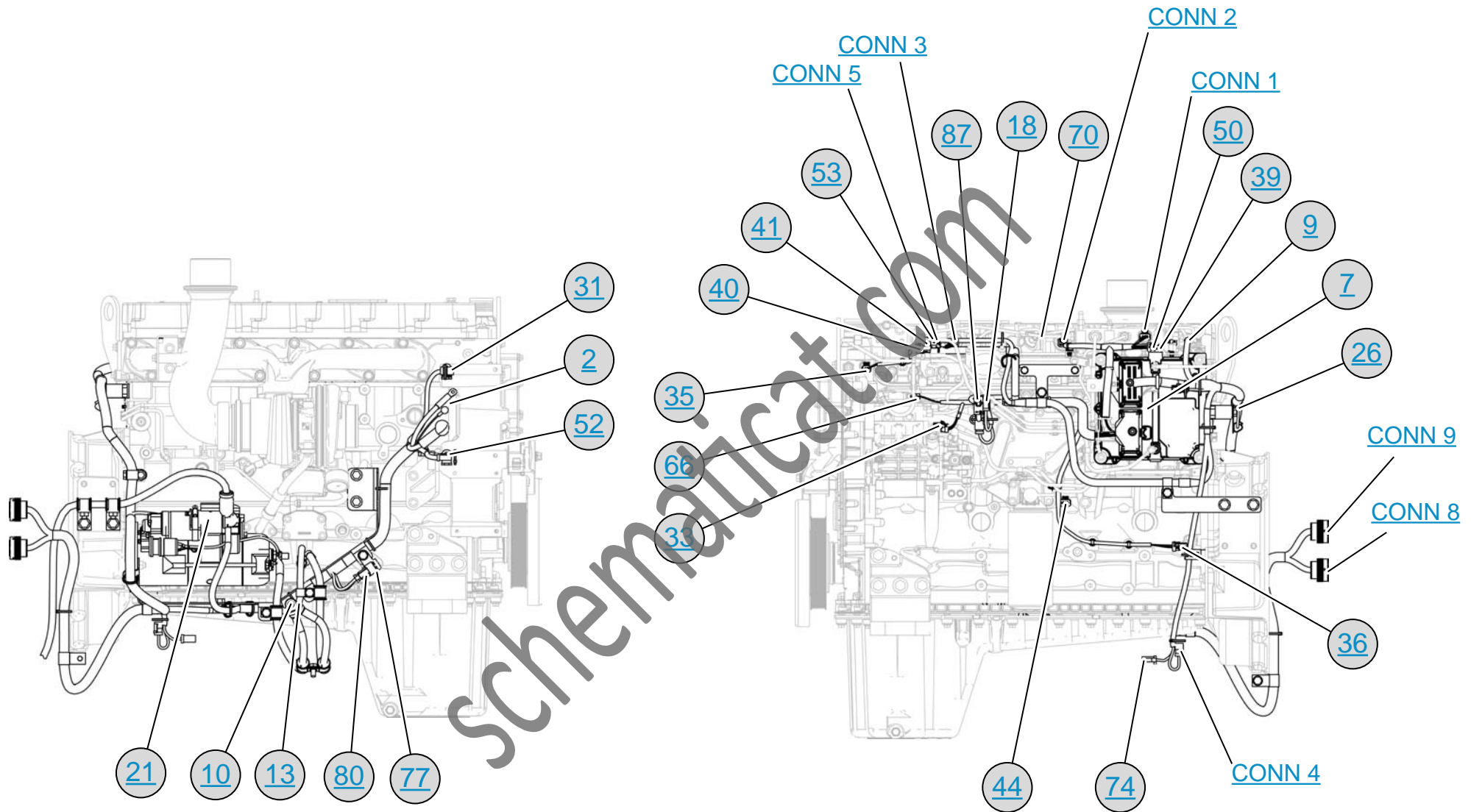




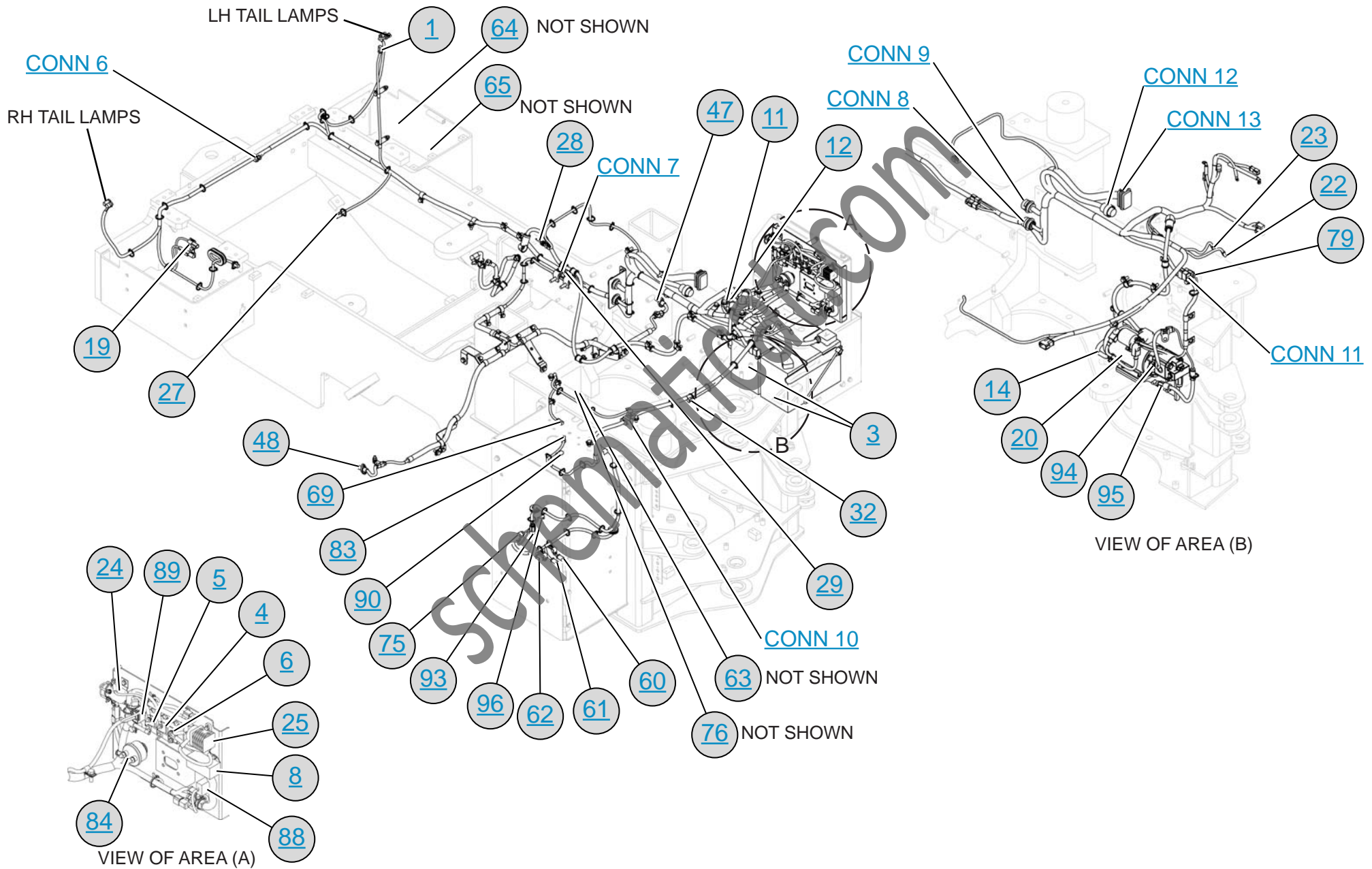
# (AT) HARNESS - TRANSMISSION



# (CH) HARNESS - ENGINE APPLICATION AND (PE) HARNESS - BASIC ENGINE

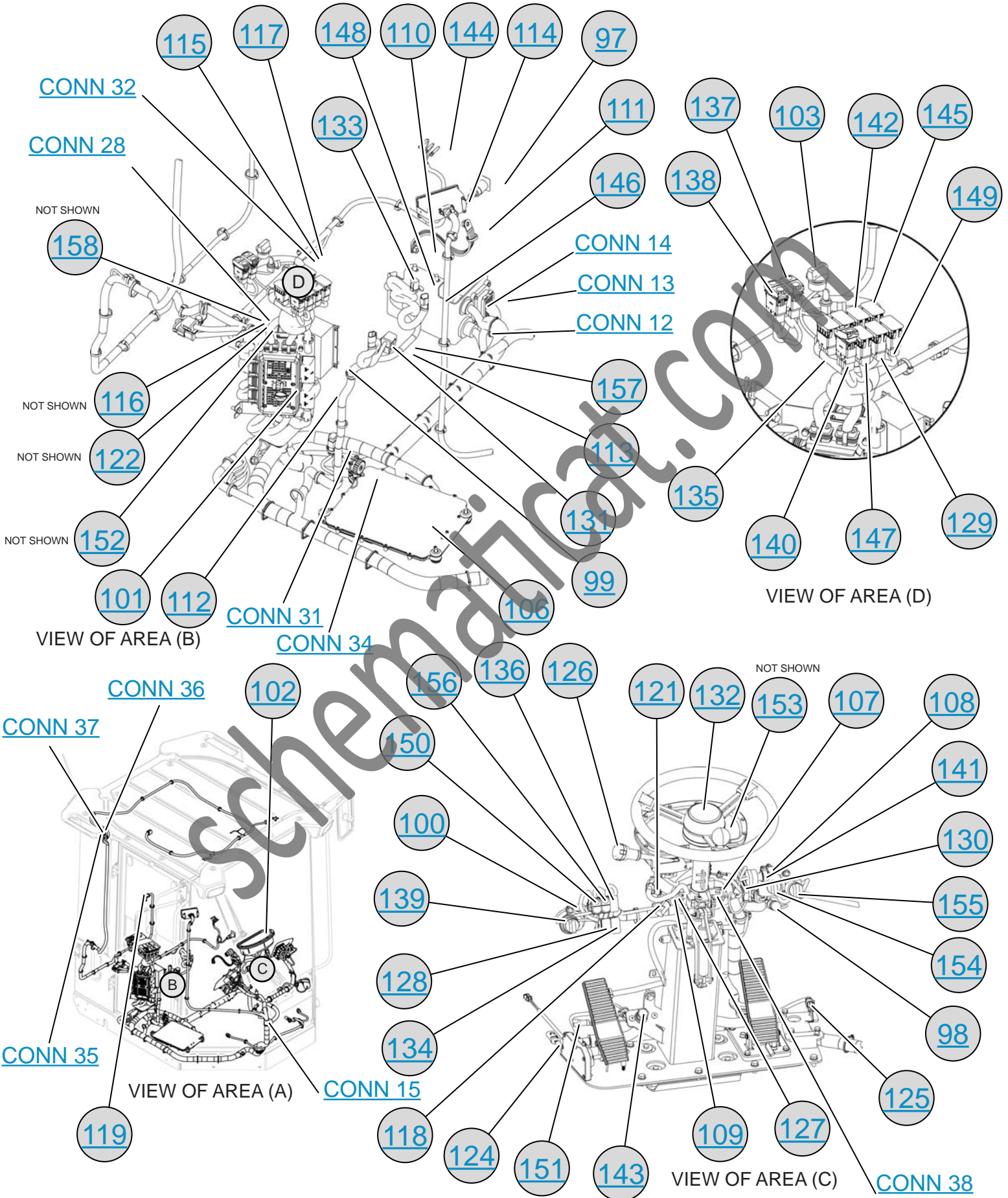


**(CJ) HARNESS - MAIN CHASSIS,  
(CV) HARNESS - SECONDARY STEERING AND  
(HC) HARNESS - HYDRAULIC SERVICE CENTER**





# (C) HARNESS - MAIN CAB



# (PC) HARNESS - PAYLOAD AND (PL) HARNESS - PRODUCT LINK

