Troubleshooting Manual

Models
T350
T500J

3121203
September 7, 2005

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A.6 USER FAULT CODE CROSS REFERENCES

CODE - MESSAGE **PAGE NO.**

0

Chassis Tilt Sensor Out Of Range 2-46
Running At Creep - Material Hook Mode 2-104

1

Function Locked Out - Joystick Not Centered At Startup 2-65
Function Locked Out - Trigger Permanently Closed 2-66
Function Problem - Engine Choke Permanently Selected 2-66
..... 2-67
Function Problem - Engine Start Permanently Selected 2-67
..... 2-68
Function Problem - Jib Down Permanently Selected 2-68
Function Problem - Jib Up Permanently Selected 2-69
Function Problem - Level Down Permanently Selected 2-70
Function Problem - Level Up Permanently Selected 2-71
Function Problem - Lift Down Permanently Selected 2-71
Function Problem - Lift Up Permanently Selected 2-72
Function Problem - Outrigger Set Permanently Selected 2-73
Function Problem - Outrigger Stow Permanently Selected 2-74
Function Problem - Swing Left Permanently Selected 2-76
Function Problem - Swing Right Permanently Selected 2-76
Function Problem - Telescope In Permanently Selected 2-77
Function Problem - Telescope Out Permanently Selected 2-78
Joystick Moved But Trigger Switch Open 2-85
Trigger Closed Too Long While In Neutral 2-116

2

Drive & O/R Prevented - Operate From Platform 2-50
Drive & O/R Prevented - Place Boom On Rest 2-51
Drive & O/R Prevented - Set Hand Brake 2-51
Drive Prevented - Lift Down 2-55
Drive Prevented - Stow Outriggers 2-55
Drive Prevented - Telescope In 2-55
Lift Down Prevented - Tele In First 2-90
Lift Up & Tele Out Prevented - Tilted & Above Elevation 2-91
Lift Up & Tele Out Prevented - Tilted,Unset,& Above Elevation 2-92
Lift Up & Tele Out Prevented - Unset & Above Elevation 2-92
Lift Up Prevented - Check Outriggers 2-92
Lift Up Prevented - Lift Down Then Set Outriggers 2-93
Lift Up Prevented - Tilted 2-93
Model Changed - Hydraulics Suspended - Cycle EMS 2-95
Outrigger Stow Prevented - Tele In First 2-97
Outriggers Prevented - Elevated 2-97
Running At Creep - Tilted & Above Elevation 2-104
Running At Creep - Unset & Above Elevation 2-104
Tele Out Prevented - Set Outriggers 2-109
Tele Out Prevented - Tilted 2-109

3

Battery Voltage Too High - System Shutdown 2-41
Battery Voltage Too Low - System Shutdown 2-41
No Charge System Output 2-95

4

Functions At Cutback - Power Module Current Limit 2-78
Power Module Too Hot - Please Wait 2-99

5

Battery Voltage Too High - System Shutdown 2-41
Battery Voltage Too Low - System Shutdown 2-42
Engine Not Running 2-60

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9

Accessory Fault 2-41
CANBUS Failure - Accessory Module Communications Lost 2-42
CANBUS Failure - Drive Module 2-43
CANBUS Failure - Platform Module 2-44
CANBUS Failure - Power Module 2-45
Chassis Tilt Sensor Gain Not Calibrated 2-45
Chassis Tilt Sensor Gain Out Of Range 2-45
Chassis Tilt Sensor Not Calibrated 2-46
Choke Hold Solenoid Open Circuit 2-47
Choke Hold Solenoid Short To Battery 2-47
Choke Hold Solenoid Short To Ground 2-48
Choke Pull Relay Open Circuit 2-48
Choke Pull Relay Short To Battery 2-49
Choke Pull Relay Short To Ground 2-49
Drive Enable Solenoid Short To Battery 2-51
Drive Enable Solenoid Short To Ground Or Open Circuit 2-52
Drive Left Forward Solenoid Open Circuit 2-52
Drive Left Forward Solenoid Short To Battery 2-53
Drive Left Forward Solenoid Short To Ground 2-53
Drive Left Reverse Solenoid Open Circuit 2-54
Drive Left Reverse Solenoid Short To Battery 2-54
Drive Left Reverse Solenoid Short To Ground 2-55
Drive Right Forward Solenoid Open Circuit 2-56
Drive Right Forward Solenoid Short To Battery 2-56
Drive Right Forward Solenoid Short To Ground 2-57
Drive Right Reverse Solenoid Open Circuit 2-57
Drive Right Reverse Solenoid Short To Battery 2-58
Drive Right Reverse Solenoid Short To Ground 2-58
Dump Solenoid Open Circuit 2-59
Dump Solenoid Short To Battery 2-59
Dump Solenoid Short To Ground 2-60
EEPROM Failure - Check All Settings 2-60
Extend O/R Solenoid Open Circuit 2-61
Extend O/R Solenoid Short To Battery 2-61
Extend O/R Solenoid Short To Ground 2-62
Front-Left O/R Solenoid Open Circuit 2-62
Front-Left O/R Solenoid Short To Battery 2-63
Front-Left O/R Solenoid Short To Ground 2-63
Front-Right O/R Solenoid Open Circuit 2-64
Front-Right O/R Solenoid Short To Battery 2-64
Front-Right O/R Solenoid Short To Ground 2-65
Function Problem - Jib Up And Down Both Selected 2-69
Function Problem - Level Up And Down Both Selected 2-70
Function Problem - Lift Up And Down Both Selected 2-72
Function Problem - Outrigger Set And Stow Both Selected 2-73
Function Problem - Rotary Selector Switch 2-74
Function Problem - Swing Left And Right Both Selected 2-75
Function Problem - Telescope In And Out Both Selected 2-77
Functions Locked Out - Constant Data Version Improper 2-78
Functions Locked Out - Platform Module Software Version Improper 2-78
Functions Locked Out - Power Module Software Version Improper 2-79
Ground Alarm Short To Battery 2-79
Ground Alarm Short To Ground 2-79
Ground Module Failure Ref Voltage Out Of Range 2-80
Ground Module Failure Vlow Fet Failure 2-80
Hourmeter Short To Battery 2-80
Jib Down Solenoid Open Circuit 2-80

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Jib Down Solenoid Short To Battery 2-81
Jib Down Solenoid Short To Ground 2-81
Jib Up Solenoid Open Circuit 2-82
Jib Up Solenoid Short To Battery 2-82
Jib Up Solenoid Short To Ground 2-83
Joystick Faulty - X axis Wiper Out Of Range 2-83
Joystick Faulty - Y axis Wiper Out Of Range 2-84
Keyswitch Faulty 2-86
Level Down Solenoid Open Circuit 2-87
Level Down Solenoid Short To Battery 2-87
Level Down Solenoid Short To Ground 2-88
Level Up Solenoid Open Circuit 2-88
Level Up Solenoid Short To Battery 2-89
Level Up Solenoid Short To Ground 2-89
Lift Down Solenoid Open Circuit 2-90
Lift Down Solenoid Short To Battery 2-91
Lift Down Solenoid Short To Ground 2-91
Lift Up Solenoid Open Circuit 2-94
Lift Up Solenoid Short To Battery 2-94
Lift Up Solenoid Short To Ground 2-95
Open-Circuit Pump Motor Wiring 2-96
Optional Ground Alarm Short To Battery 2-96
Optional Ground Alarm Short To Ground 2-96
Platform Position Detection Faulty 2-97
Power Module Failure Check Power Circuits Or Mosfet Short Circuit 2-98
Power Module Failure Internal Error 2-98
Power Module Failure Personality Range Error 2-99
Rear-Left O/R Solenoid Open Circuit 2-99
Rear-Left O/R Solenoid Short To Battery 2-100
Rear-Left O/R Solenoid Short To Ground 2-100
Rear-Right O/R Solenoid Open Circuit 2-101
Rear-Right O/R Solenoid Short To Battery 2-101
Rear-Right O/R Solenoid Short To Ground 2-102
Retract O/R Solenoid Open Circuit 2-102
Retract O/R Solenoid Short To Battery 2-103
Retract O/R Solenoid Short To Ground 2-103
Start Solenoid Open Circuit 2-105
Start Solenoid Short To Battery 2-105
Start Solenoid Short To Ground 2-106
Swing Left Solenoid Open Circuit 2-106
Swing Left Solenoid Short To Battery 2-107
Swing Left Solenoid Short To Ground 2-107
Swing Right Solenoid Open Circuit 2-108
Swing Right Solenoid Short To Battery 2-108
Swing Right Solenoid Short To Ground 2-109
Telescope In Solenoid Open Circuit 2-110
Telescope In Solenoid Short To Battery 2-110
Telescope In Solenoid Short To Ground 2-111
Telescope Out Solenoid Open Circuit 2-112
Telescope Out Solenoid Short To Battery 2-112
Telescope Out Solenoid Short To Ground 2-113
Throttle Hold Solenoid Open Circuit 2-113
Throttle Hold Solenoid Short To Battery 2-114
Throttle Hold Solenoid Short To Ground 2-114
Throttle Pull Relay Open Circuit 2-115
Throttle Pull Relay Short To Battery 2-115
Throttle Pull Relay Short To Ground 2-116

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1.3 ALL FUNCTIONS INOPERATIVE, ENGINE STARTS AND RUNS - ENGINE MODELS

Step	Pretest Instructions	Test	Result	Corrective Action
1.3.1		Basic check of likely causes		Possible Causes: 4.1.68
1.3.2		Try both ground and platform controls	One set of controls functions	See 1.10 Ground Controls Inoperative or 1.11 Platform Controls Inoperative
			Both sets of control inoperable	Go to step 1.3.3
1.3.3		Is the hydraulic pump turning with the engine?	Yes	Go to step 1.3.4
			No	Perform component check: 3.6 Engine Powered Machine - Hydraulic Pump
1.3.4	Connect a 0-5000 PSI pressure gauge at the manifold "G" port	While holding enable and lift up switch, does pressure rise above 100PSI (minimum function pressure)?	Yes	Possible Causes: 4.1.37, 4.1.47
			No	Go to step 1.3.5
1.3.5	Plumb a 0 to 5000 PSI (345 bar) pressure gauge into the manifold P port	While holding enable and lift up switch, does pressure rise above 100PSI (minimum function pressure)?	Yes	Possible Causes: 4.1.40, 4.1.10, 4.1.47
			No	Possible Causes: 4.1.37, 4.1.45, 4.1.74, 4.1.75, 4.1.39

1.4 ALL FUNCTIONS INOPERATIVE, PUMP MOTOR RUNS - DC POWERED MODELS

Step	Pretest Instructions	Test	Result	Corrective Action
1.4.1		Basic check of likely causes		Possible Causes: 4.1.68
1.4.2		Try both ground and platform controls	One set of controls functions	See 1.10 Ground Controls Inoperative or 1.11 Platform Controls Inoperative
			Both sets of control inoperable	Go to step 1.4.3
1.4.3	Connect a 0-5000 PSI pressure gauge at the manifold "G" port	While holding enable and lift up switch, does pressure rise above 100PSI (minimum function pressure)?	Yes	Possible Causes: 4.1.37, 4.1.47
			No	Go to step 1.4.4
1.4.4	Plumb a 0 to 5000 PSI (345 bar) pressure gauge into the manifold P port	While holding enable and lift up switch, does pressure rise above 100PSI (minimum function pressure)?	Yes	Possible Causes: 4.1.40, 4.1.10, 4.1.47
			No	Possible Causes: 4.1.37, 4.1.45, 4.1.39

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SECTION 4. POSSIBLE CAUSES

4.1 POSSIBLE CAUSES

Item	Possible Cause	Possible Solution
4.1.1	Bad contacts at connector	Repair or replace
4.1.2	System Setup information may be incorrect	Make sure the setup displayed on the analyzer matches the machine
4.1.3	Battery or charger may be installed incorrectly	Check battery wiring and polarity
4.1.4	Improper battery level	Charge or replace batteries
4.1.5	Black battery ground wire may be damaged between X008.1 and B- (engine:X100 or electric:X101)	Repair or replace
4.1.6	Ignition relay at XD09 may be defective	Repair or replace
4.1.7	XD09.86 may be shorted to battery	Isolate wire shorted to battery and repair. Check Yel/Red 2-5, Yel/Red 2-10, Yel/Red 2-7, Yel/Red 2-44, Yel/Red 2-9
4.1.8	Battery Charger may be defective	Contact Factory
4.1.9	Drive module may be defective	Contact Factory
4.1.10	Ground module may be defective	Contact Factory
4.1.11	Platform module may be defective	Contact Factory
4.1.12	Power module may be defective	Contact Factory
4.1.13	Improper or incompatible software may be installed	Check software versions and replace if necessary
4.1.14	CAN wiring between ground and platform may be defective	Check contacts at XD07, XD19, XD10, XD55, XD51, XD52, or repair CAN wiring
4.1.15	Black ground wire from battery, X100 may be cut	Check continuity to X100 and repair wire or connectors
4.1.16	On board system memory may have been corrupted	Check / correct all settings and re-cycle power to clear difficulty
4.1.17	Integrated Tilt sensor may be defective	Contact Factory
4.1.18	Switch may be defective	Repair or replace
4.1.19	Switch may be stuck	Check for obstructions and switch freedom of motion
4.1.20	Limit Switch may be out of adjustment	Adjust the switch to the specified trip level and retighten
4.1.21	Engine speed pickup may be defective	Repair or replace
4.1.22	Joystick may be defective	See 3.10 Joystick Diagnostics or Repair or replace
4.1.23	Intermittent voltage fluctuation	Check the Help Log for recent recorded problems; Test all conditions
4.1.24	Hourmeter may be defective	Repair or replace
4.1.25	Alarm may be defective	Repair or replace
4.1.26	Joystick calibration may be corrupt	Calibrate
4.1.27	LED or LED module may be defective	Repair or replace
4.1.28	Engine Start / Charge Fuse may be blown	See Engine Owner's Manual for fuse replacement
4.1.29	Engine Charge coil may be defective	Repair or replace, See Engine Owner's Manual for more information
4.1.30	Engine Voltage Rectifier may be defective	Repair or replace, See Engine Owner's Manual for more information
4.1.31	Optional Lift Hook harness may be defective	Check for shorts, opens, and miswired connectors
4.1.32	The boom may be latched to the trailer	Engage lift down, telescope in, and platform leveling until boom is relieved of pressure, unlatch boom and try the function again.
4.1.33	The ground control is being operated without enable	Use enable and try again
4.1.34	The ground may be too uneven for proper outrigger deployment and leveling	Find a more even and/or level area
4.1.35	The ground module may not be mounted properly	Level and properly mount the ground module

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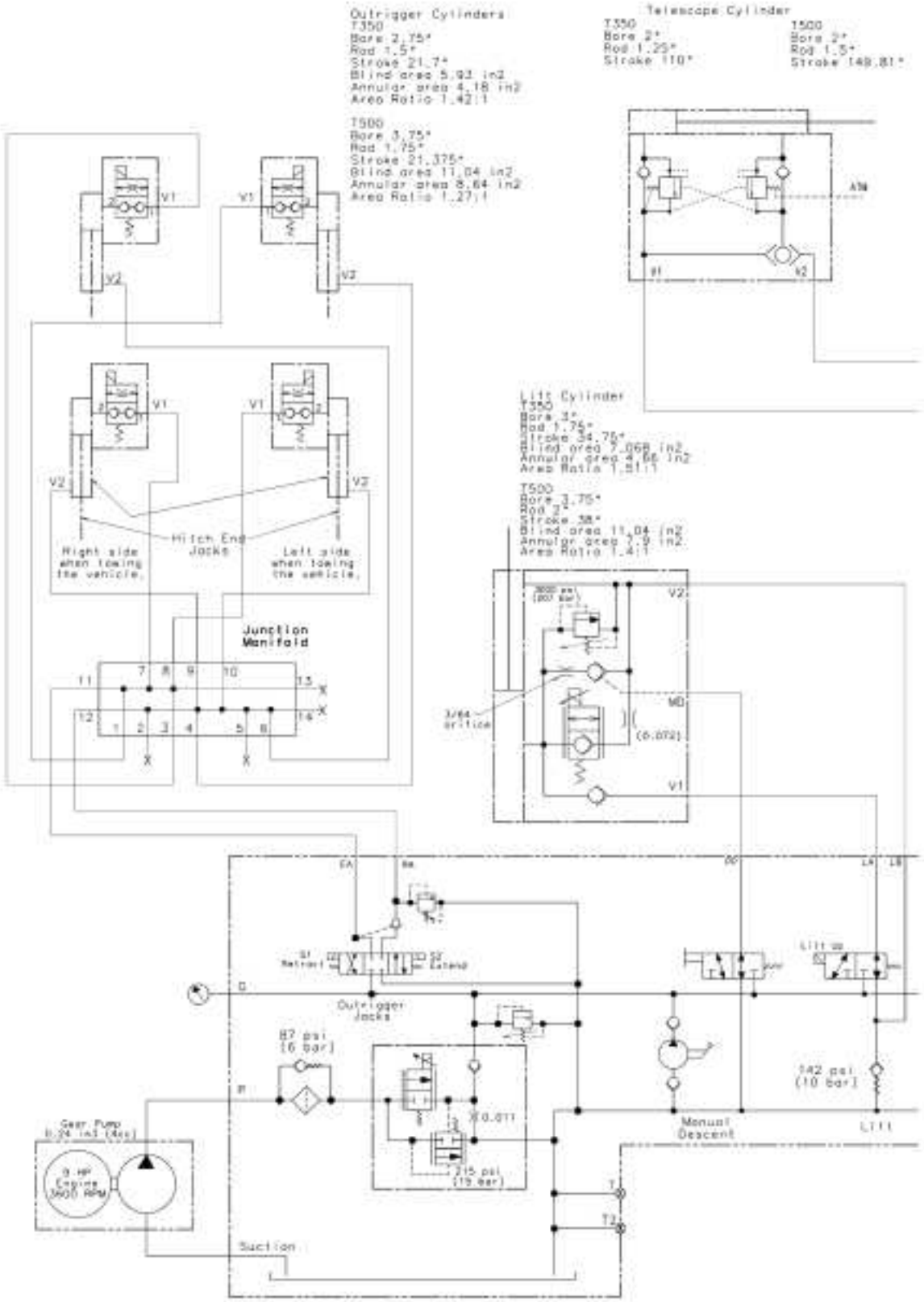


Figure 8-4. Hydraulic Schematic - Engine Powered Machines (Sheet 1 of 2)

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7.7 WORKING WITH DEUTSCH CONNECTORS

DT/DTP Series Assembly



Figure 7-13. DT/DTP Contact Installation

1. Grasp crimped contact about 25mm behind the contact barrel.
2. Hold connector with rear grommet facing you.
3. Push contact straight into connector grommet until a click is felt. A slight tug will confirm that it is properly locked in place.
4. Once all contacts are in place, insert wedgelock with arrow pointing toward exterior locking mechanism. The wedge-lock will snap into place. Rectangular wedges are not oriented. Thy may go in either way.

NOTE: *The receptacle is shown - use the same procedure for plug.*

DT/DTP Series Disassembly



Figure 7-14. DT/DTP Contact Removal

1. Remove wedgelock using needlenose pliers or a hook shaped wire to pull wedge straight out.
2. To remove the contacts, gently pull wire backwards, while at the same time releasing the locking finger by moving it away from the contact with a screwdriver.
3. Hold the rear seal in place, as removing the contact may displace the seal.

HD30/HDP20 Series Assembly



Figure 7-15. HD/HDP Contact Installation

1. Grasp contact about 25mm behind the contact crimp barrel.
2. Hold connector with rear grommet facing you.

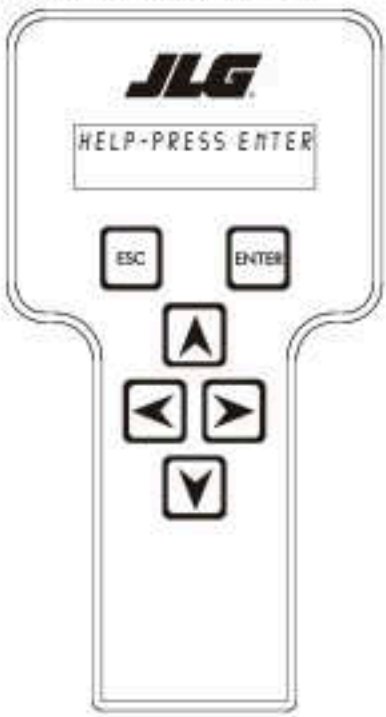
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Ground Test

1. Position the Platform/Ground select switch to the Ground position.
2. Plug the analyzer into the connector inside the Ground control box.



3. Pull out the Emergency Stop switch. and Start the engine.
4. The analyzer screen should read:



5. Use the arrow button to reach SYSTEM TEST. Hit Enter. The analyzer will prompt you asking if you want to activate the system test; hit Enter again to activate.
6. Follow the flow path in Figure 9-6., System Test Flow Chart - Ground Station Tests and go through the component tests. Hit the ESC key during any part of the test to return to the main menu without completing all tests or wait until all tests are complete. During the TEST ALL INPUTS sequence, the analyzer allows control switches to be operated and shows if they are closed (CL) or open (OP).

9.8 USER FAULT CODES

A single digit fault code blinks on the Platform and the Ground control panel to signal the operator of a procedure fault. These Codes are as follows:

1 --> Procedure (i.e., Did Not Close Trigger, Joystick Not Centered, etc.)

2 --> Vehicle Setup (i.e., Outriggers Not Set, Machine Not Level)

3 --> Battery Charger Engaged

4 --> Excessive Duty Cycle/Power Module Thermal Cutout

5 --> Batteries Discharged/Start Engine/Turn Off System

6 --> Not Used

7 --> Not Used

8 --> Not Used

9 --> Vehicle Requires Service

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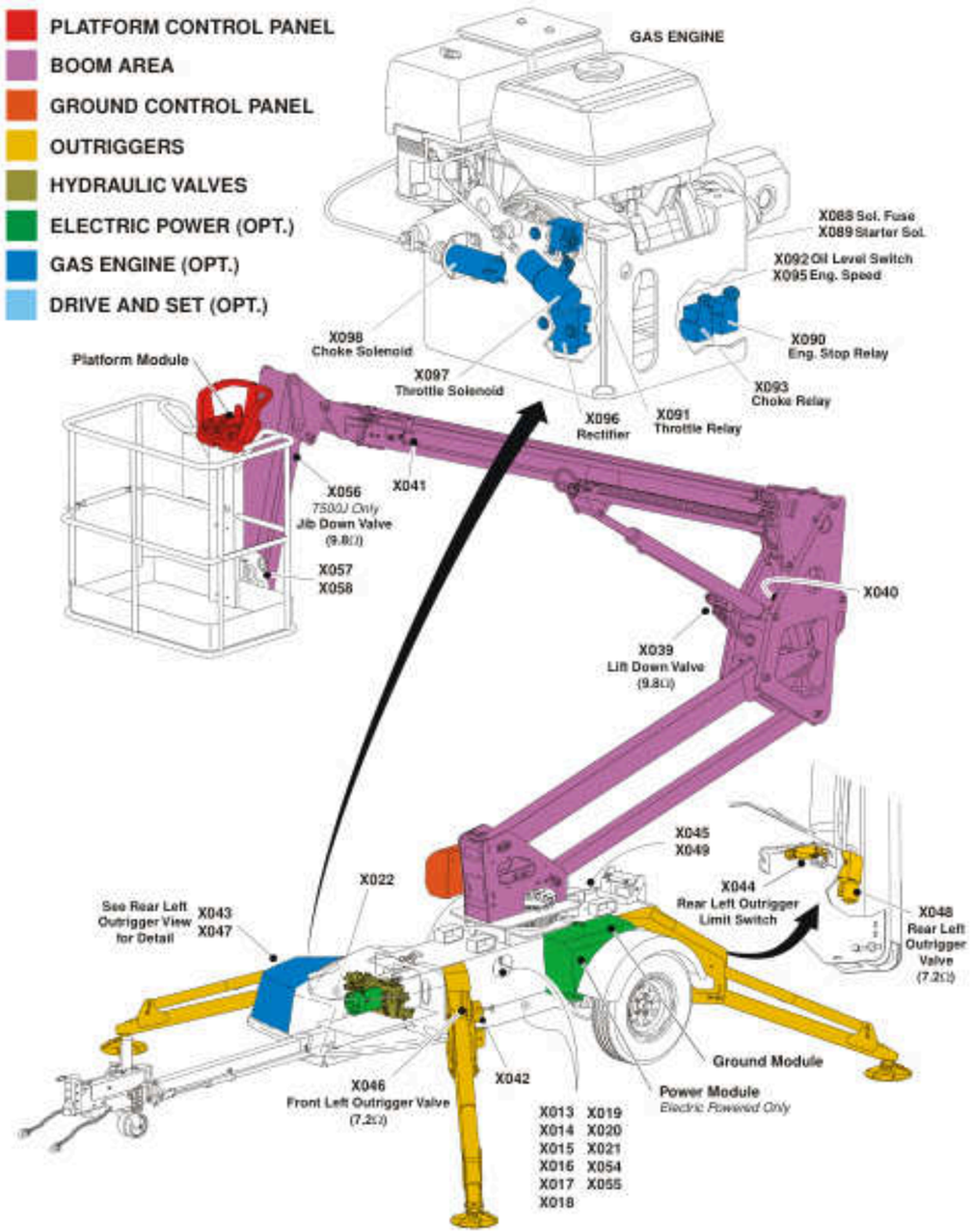


Figure 7-1. Frame Connector Layout

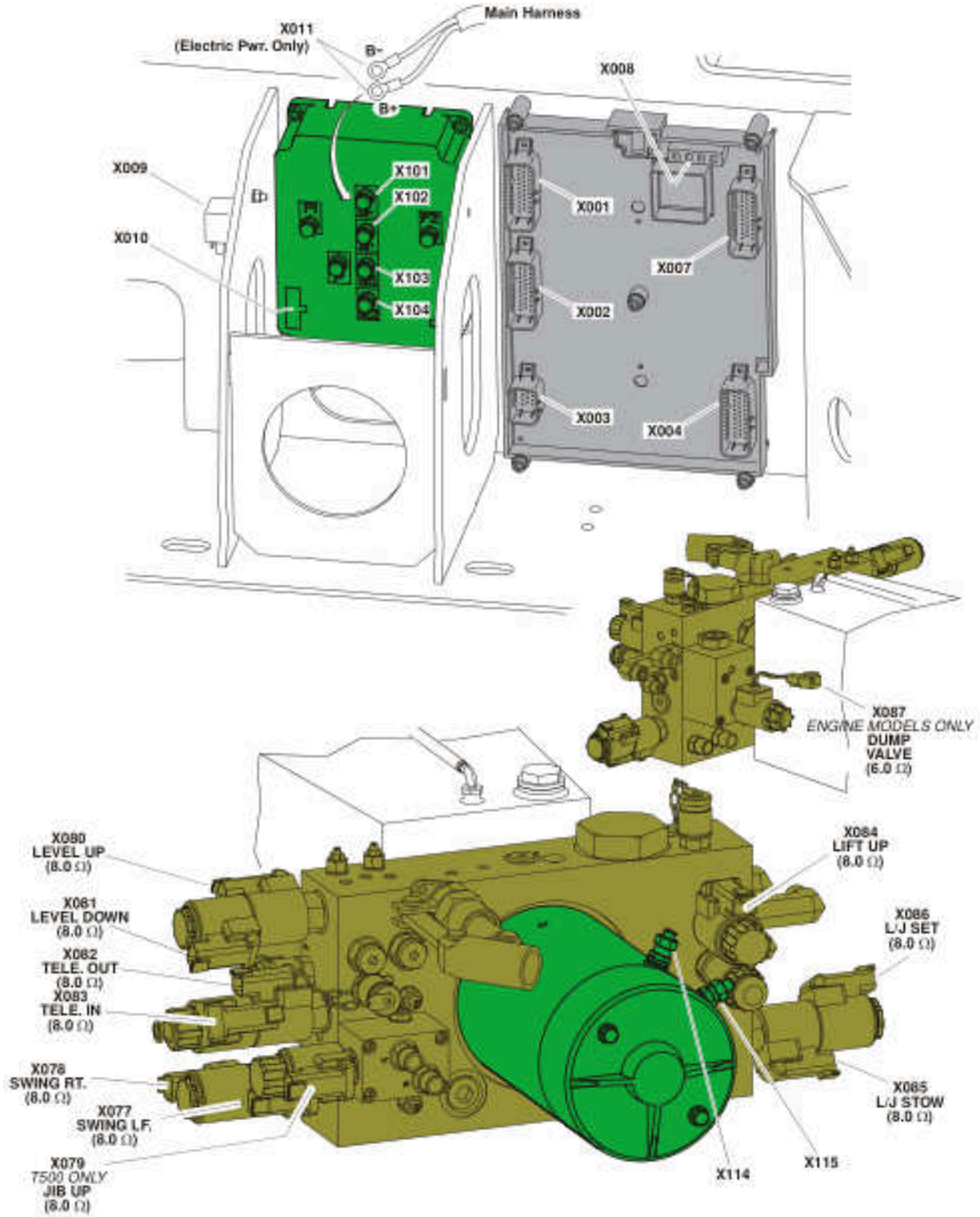


Figure 7-2. Ground Control / Valve Connections

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