Table 3-1. JLG SMART System™ Flash Fault Codes.

Code	Fault
1-1	Idle time-out
2-1	EMS inputs (both together, or neither)
2-2	Platform (digital) inputs (includes high drive for > 10 seconds)
2-3	Ground (digital) inputs
2-4	Steering (digital) inputs
2-5	Cut-out input (not a fault but an indication)
2-7	Accelerator (analog) input
2-8	Arm guard or platform descent delay system (European [CE Specification] Machines Only)
3-1	Line contactor open circuit or welded
3-3	Line contactor (or other) driver short circuit (or tripped)
4-2	Temperature cut back
4-4	Battery supply voltage out of range
9-1	Watchdog reset
9-2	EEprom Fault
9-3	Mux stream not being updated
9-6	Point A short circuit
9-7	Point A open circuit
9-8	Motor open circuit
9-9	Power circuit failure (driver short circuit, bat/cap < 15V)

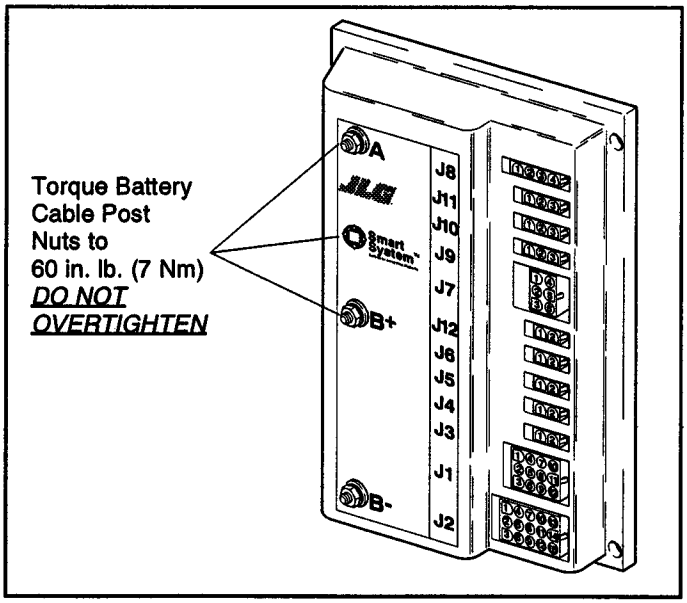

Figure 3-1. JLG SMART System™ Controller.

IMPORTANT

WHEN INSTALLING A NEW SMART SYSTEM CONTROLLER ON THE MACHINE, ELECTRICAL SILICONE GREASE, JLG PART NUMBER 0100076 OR 7016397, MUST BE APPLIED TO THE BACK OF THE CONTROLLER.

IMPORTANT

IT IS A GOOD PRACTICE TO AVOID PRESSURE-WASHING ELECTRICAL/ELECTRONIC COMPONENTS. SHOULD PRESSURE-WASHING BE UTILIZED TO WASH AREAS CONTAINING ELECTRICAL/ELECTRONIC COMPONENTS, JLG INDUSTRIES, INC. RECOMMENDS A MAXIMUM PRESSURE OF 750 PSI (52 BAR) AT A MINIMUM DISTANCE OF 12 INCHES (30.5 CM) AWAY FROM THESE COMPONENTS. IF ELECTRICAL/ELECTRONIC COMPONENTS ARE SPRAYED, SPRAYING MUST NOT BE DIRECT AND BE FOR BRIEF TIME PERIODS TO AVOID HEAVY SATURATION.

Table 3-2. JLG SMART System™ Troubleshooting.

TROUBLESHOOTING CHART

TROUBLE	PROBABLE CAUSE	REMEDY
Machine Functions.		
All machine functions do not operate.		
	Emergency Stop switch not activated.	Activate Emergency Stop switch and wait for flash of LED's.
	Joystick not in neutral position. (flash code 2-7)	Release joystick, then select function.
	Joystick potentiometer not centered.	Use analyzer to verify potentiometer is centered. (Accel should be 0) Replace joystick (JLG part no. 1600257 thru June 1997 or 1600266 after June 1997) if not 0.
	Idle time-out. (flash code 1-1)	Select function again.
	Mux stream not being updated. (flash code 9-3)	
	• No power to the multiplexer card in the platform.	Use voltmeter to verify power on J4 of the multiplexer board.
	• Platform cable not connected to platform box or SMART System™ at base (J2).	Re-connect cable to platform box or J2.
	• Faulty multiplexer card.	Replace multiplexer card. (JLG part no. 0610123)
	Battery voltage out of range. (flash code 4-4)	
	• If battery charger is plugged in, voltage of batteries may be above 31 Volts.	Check voltage with VOM. Unplug battery charger.
	• Battery voltage too low.	Check voltage with VOM. Plug in battery charger.
	Line contactor open circuit. (flash code 3-1)	
	• Loose wiring connections on line contactor or at harness connection J1.	Check wire terminations on line contactor and harness connection at J1. Tighten connections as necessary.
	• Open coil on line contactor.	Clean corrosion from line contactor. Replace line contactor. (JLG part no. 3740117)
	• Faulty wiring at J1.	Repair or replace wiring as necessary.

Table 3-2. JLG SMART System™ Troubleshooting.

TROUBLESHOOTING CHART

TROUBLE	PROBABLE CAUSE	REMEDY
Machine Functions. (cont.)		
All machine functions do not operate. (cont.)		
	Line contactor welded. (flash code 3-1)	Replace line contactor. (JLG part no. 3740117)
	Line contactor or other driver short circuit or tripped. (flash code 3-3)	Disconnect valve harness at J1. Using an ohm meter, measure resistance between B - and each pin of the connector, except pin 10. Each reading should be 1 - 12 megaohms. If any reading is less, replace controller. (JLG part no. 1600258)
	Point A short circuit. (flash code 9-6)	
	• Motor lead connections loose.	Check motor lead connections. Tighten connections as necessary.
	• Faulty controller.	Replace controller. (JLG part no. 1600258)
	Point A open circuit. (flash code 9-7)	
	• Faulty controller.	Replace controller. (JLG part no. 1600258)
	• Motor stalled.	Determine cause. Repair or replace motor (JLG part no. 3600266) as necessary.
	Motor open circuit. (flash code 9-8)	
	• Faulty motor.	Replace motor. (JLG part no. 3600266)
No drive function when platform fully lowered. Lift function okay.		
	Cutout input. (flash code 2-5)	
	• Malfunctioning limit switch.	Use analyzer to verify limit switch inputs. Drive cutout and Elevation cutout should be HI. Adjust or repair malfunctioning limit switch.
No drive function when platform elevated. Lift function okay.		
	Cutout input. (flash code 2-5)	
	• Malfunctioning limit switch.	Use analyzer to verify limit switch inputs. Pothole should be HI. Adjust or repair malfunctioning limit switch.
	• Platform above drive cutout height.	Lower platform below drive cutout height.
Machine cannot lift down. Lift up function okay.		
	Cutout input. (flash code 2-5)	
	• Deck extension extended.	Use analyzer to verify limit switch inputs. Extension limit should be HI. Retract deck extension.

Table 3-3. Hydraulic System Troubleshooting.

TROUBLESHOOTING CHART		
TROUBLE	**PROBABLE CAUSE**	**REMEDY**
Hydraulic System - General.		
Hydraulic pump noisy.		
	Air bubbles in oil. (Reservoir too low.)	Replenish oil as necessary.
	Oil filter dirty.	Clean and/or replace filter as necessary.
Pump cavitating. (Vacuum in pump due to oil starvation.)		
	Oil in reservoir low.	Replenish oil as necessary.
	Restricted reservoir air vent.	Clean vent.
	Oil viscosity too high.	Drain system and replace with recommended oil. Refer to Table 1-1, Hydraulic Oil.
System overheating.		
	Oil viscosity too high.	Drain system and replace with recommended oil. Refer to Table 1-1, Hydraulic Oil.
	Main relief valve set too high.	Adjust relief valve to proper pressure.
	Hydraulic system oil low.	Replenish oil as necessary.
Pump not delivering oil.		
	Defective pump on motor.	Repair or replace motor.
System pressure too low.		
	Main relief valve set too low.	Reset valve as required.
	Hydraulic pump not functioning properly.	Repair or replace pump.
	Leak in component, line or fitting.	Repair or replace component, line or fitting.
	Scored valve spool; scored cylinder.	Replace valve; replace cylinder.
System(s) operate erratically.		
	Sticking or binding valve cartridge, piston rod, etc.	Clean, repair or replace components as necessary.
	Hydraulic oil not at operating temperature.	Allow oil sufficient time to warm up.