

Troubleshooting

PROBLEM	CAUSE	SOLUTION
No power to machine	Battery disconnected	Check all battery cable connections
	Emergency shut-off activated	Reset
	Faulty key switch	Replace switch
Little or no propel	Low battery charge	Charge batteries
	Machine turned on with pedal not in neutral position	Allow pedal to return to neutral. Restart
	Tripped circuit breaker	Reset circuit breaker and check brush
	Controller overheated	Allow cool down period
	Loose motor connection	Check wires and connections from controller to motor
	Faulty throttle circuit or potentiometer	Check wires and connections from throttle to controller and potentiometer resistance
	Faulty drive reset circuit or switch	Check wires, connection and switch
	Faulty platform circuit or switch	Check wires, connections and switch
	Brake over-ride engaged	Disengage brake over-ride
	Faulty brake circuit or over-ride switch	Check wires, connections and switch
Machine does not change speeds	Faulty speed control circuit or switch	Check wires, connections and switch
Forward speed only Reverse speed only	Faulty forward/reverse switch	Replace Switch
Vacuum and brush do not turn on	Circuit breaker tripped	Reset
	Full bag or clog in system (bag full light on)	Replace bag, check for and remove debris
Poor vacuums performance	Debris caught in system	Remove debris
	Low battery charge	Charge batteries
Brush motors do no run, or run slowly	Bag full light on	Replace bag or remove clog
	Circuit breaker(s) tripped	Reset circuit breaker(s)
	Low battery charge	Charge battery
	Fault brush circuit or motor	Check wires, connections and motor

Propel Circuit Board Troubleshooting

Curtis 1228 LED DIAGNOSTICS

During normal operation, with no faults present, the status LED is steadily on.

If the controller detects a fault, the status LED provides two types of information.

First, it displays a slow flash (2 Hz) or a fast flash (4 Hz) to indicate the severity of the fault. Slow-flash faults are self-clearing; as soon as the fault is corrected, the vehicle will operate normally. Fast-flash faults ("." in Table 2) are considered to be more serious in nature and require that the key switch be cycled to resume operation after the fault is corrected.

After the severity indication has been active for 10 seconds, the status LED flashes a 2-digit fault identification code continuously until the fault is corrected. For example, code "1,4"-low battery voltage-appears as: one LED flash, followed by a pause, then 4 LED flashes, and then repeats.

LED CODE	PROGRAMMER LCD DISPLAY	EXPLANATION	POSSIBLE CAUSE
1,1	THERMAL CUTBACK	over-/under-temperature cutback	1. Temperature >92°C or < -25°C. 2. Excessive load on vehicle. 3. Operation in extreme environments. 4. Electromagnetic brake not releasing.
1,2	THROTTLE FAULT 1	throttle fault	1. Throttle input wire open or shorted. 2. Throttle pot defective. 3. Wrong throttle type selected
1,3	SPD LIMIT POT FAULT	speed limit pot fault	1. Speed limit pot wire(s) broken or shorted. 2. Broken speed limit pot.
1,4	LOW BATTERY VOLTAGE	battery voltage too low	1. Battery voltage <17 volts. 2. Bad connection at battery or controller.
1,5	OVERVOLTAGE	battery voltage too high	1. Battery voltage >36 volts. 2. Vehicle operating with charger attached. 3. Intermittent battery connection.
2,1	MAIN OFF FAULT	main contactor driver Off fault	1. Main contactor driver failed open.
2,3	MAIN CONT FLTS	main contactor fault	1. Main contactor welded or stuck open. 2. Main contactor driver fault. 3. Brake coil resistance too high.
2,4	MAIN ON FAULT	main contactor driver On fault	1. Main contactor driver failed closed.

LED CODE	PROGRAMMER LCD DISPLAY	EXPLANATION	POSSIBLE CAUSE
3,1	PROC/WIRING FAULT	HPD fault present for >10 sec.	1. Misadjusted throttle. 2. Broken throttle pot or throttle mechanism.
3,2	BRAKE ON FAULT	brake On fault	1. Electromagnetic brake driver shorted. 2. Electromagnetic brake coil open.
3,3	PRECHARGE FAULT	precharge fault	1. Low battery voltage. 2. KSI and throttle turned on at same time.
3,4	BRAKE OFF FAULT	brake Off fault	1. Electromagnetic brake driver open. 2. Electromagnetic brake coil shorted.
3,5	HPD	HPD (High Pedal Disable) fault	1. Improper sequence of throttle and KSI, push, or inhibit inputs. 2. Misadjusted throttle pot.
4,1	CURRENT SENSE FAULT	current sense fault	1. Short in motor or in motor wiring. 2. Controller failure.
4,2	HW FAILSAFE	motor voltage fault (hardware)	1. Motor voltage does not correspond to throttle request. 2. Short in motor or in motor wiring. 3. Controller failure.
4,3	EEPROM FAULT	EEPROM fault	1. EEPROM failure or fault.
4,4	POWER SECTION FAULT	power section fault	1. EEPROM failure or fault. 2. Short in motor or in motor wiring. 3. Controller failure.