

# Alpine Elevator Troubleshooting Guide

## Introduction & First Steps

1. Applies to Models 3561/A, 3563/A
2. First check that i-Vend is functioning OK, is the RED LED lit and it switches OFF when the array is interrupted; if in doubt check the i-vend status in the diagnostic menu 0.6
3. Secondly check that the delivery flap is registering 'closed' i.e. LED D1 is lit, if the flap is registering 'open' nothing will move
4. The GVC error log could be misleading due to some historical events, clear these by entering/exiting service mode to start with a 'clean sheet'
5. Before attempting to troubleshoot potential control related issues **always** start the process with the elevator in the STANDBY position i.e. the top lock-slide switch is actuated, and that the baffle is fully OPEN, back inside the cabinet and also check that the front baffle limit switch is actuated
6. With the main door open stand with your back to the cabinet, manually override the door switch whilst looking at the elevator bucket, then observe closely for the following sequence:
  - a) Elevator is driven  $\frac{1}{4}$  -  $\frac{1}{2}$ " down to the PARK position momentarily – both lock slide switches LS1 & LS2 are deactivated
  - b) Baffle comes out of cabinet – in the process the front 'open' limit switch is deactivated & the back 'closed' limit switch is then activated
  - c) Elevator is driven down to the VEND position momentarily – the bottom lock slide switch LS1 is activated
  - d) Elevator is then instantly driven back up to the STANDBY position momentarily – the bottom lock slide switch LS1 is deactivated & the top lock slide switch LS2 is activated
  - e) Baffle moves back into cabinet – the rear 'closed' limit switch is deactivated and the front 'open' limit switch is activated
  - f) Elevator is then driven up to the TOP LIMIT – limit switch at top of frame is activated for an instant
  - g) Elevator motor immediately reverses and is drives back down to the PARK position - top lock slide switch LS2 is deactivated.
  - h) As the elevator descends the reed switch on the side of the elevator tray reads the location of each tray magnet and stores the location electronically with the aid of the dual magnetic encoder on the elevator motor. The electronic mapping is then used to position the elevator for each vend. This process is repeated each time the door is closed or the machine is powered-up with the door closed.
  - i) Elevator motor instantly reverses and is driven up to the STANDBY position - top lock slide switch LS2 is activated

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The above steps in most case will reveal a point or position of failure for consideration/resolution, refer to the table below for further guidance:-

Problem	Symptoms	Error Code/s	Possible Cause/s
The Elevator or Baffle do not move or operate	No activity from the elevator system	None	<p>Delivery Door Optical Switch (J4 of Elevator Control Board, Black, Brown &amp; White wires, GREEN LED D11 is lit when the delivery door is CLOSED):</p> <ol style="list-style-type: none"> <li>Check that the delivery door is fully closed</li> <li>Move the elevator down to unlock the delivery door, open the flap by ½” and allow to close VERY slowly under its own weight to check that the delivery door is completely free in its motion and it snaps shut – VERY IMPORTANT</li> <li>Check that the GREEN LED D1 on the elevator control board is lit indicating the delivery door is CLOSED</li> <li>Check that the optical switch actuator plate mounted to the back of the delivery door is not blocking the switch when the door is CLOSED. Adjust plate such that LED D11 comes ON when the door is ¼” – ⅜” away from the closed position at the bottom edge of the door.</li> <li>Check the inline connection next to the switch</li> <li>Check the connection to the Elevator Control Board at J4.</li> <li>Faulty Optical Switch, replace</li> </ol>
Baffle does not open after a vend	At the end of a vend, after the item has been retrieved, the baffle does not re-OPEN for 1 minute. During the 1 minute delay the message “Please Remove Your Product” is shown and the bleeper sounds every 10 seconds	None	<p>Delivery Door Optical Switch (J4 of Elevator Control Board, Black, Brown &amp; White wires, GREEN LED D11 is lit when the delivery door is CLOSED):</p> <ol style="list-style-type: none"> <li>Check that the GREEN LED D11 goes out when the delivery door is opened by ⅜” at the bottom edge.</li> <li>If necessary adjust the actuator plate as described in d) above</li> <li>Faulty Optical Switch, replace</li> </ol>
Out of Service	Power cycle with main door closed and baffle fully open/home – Elevator is driven to VEND and stops, baffle cycles out/in 3 times and stops	EFL 2 EFL 99	<p>UPPER Lock Slide Switch (Orange &amp; Black wires, GREEN LED D8 is lit when switch is not actuated):</p> <ol style="list-style-type: none"> <li>Check that the lock slide is not hitting the underside of the delivery door because it is not closing correctly</li> <li>Move the elevator up to give good access &amp; visibility of the lock-slide. Operate the lock slide very slowly by hand to ensure the motion is free and both switches are correctly actuated.</li> <li>Check connection at switch</li> <li>Check connection at elevator control board</li> <li>Switch open-circuit/damaged, repalce switch</li> </ol>
	Power cycle with main door closed and the baffle partly out or fully closed – Elevator ascends and hits baffle and stops	EFL 2 EFL 5 EFL 99	

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Problem	Symptoms	Error Code/s	Possible Cause/s
Out of Service	Power cycle with main door closed - Elevator attempts to drive very slowly to STANDBY; if baffle is partly out or closed the elevator is stopped/stalled, GVC attempts 2 further resets which fail.  If the baffle is fully in/open the elevator will continue to the top limit switch and stop.	EFL 5	UPPER Lock Slide Switch (Orange & Black wires, GREEN LED D8 is lit when the switch is not actuated): a) Switch contacts do not open when lever is actuated, replace switch b) Wiring to switch is 'short-circuit'
Out of Service	Power cycle with elevator in STANDBY, baffle fully open and main door closed – The baffle closes, elevator is moved to PARK then back to STANDBY, baffle cycles a couple of times and stops in an unpredictable position, then there 4 short pulses which move the baffle by approx 1/16" each time, then the system goes out of service	EFL 2  EFL 5  EFL 99	LOWER Lock Slide Switch (Yellow & Black wires, GREEN LED D9 is lit when the switch is not actuated): a) Check connection at switch b) Check connection at elevator control board c) Switch open-circuit/damaged, replace switch
	Power cycle with elevator is in the STANDBY position and the baffle is partly out - The baffle is pulsed 4 times, then a 2 second delay and then a 2 <sup>nd</sup> set of 4 pulses before going out of service again.	EFL 99	
Out of Service	Power cycle with elevator is in the STANDBY position – The baffle closes, then a dull 'thump' can be heard and the timing belt may jump a couple of times on the pulleys as the elevator is driven against the bottom stop/end limit.	EFL 1	LOWER Lock Slide Switch (Yellow & Black wires, GREEN LED D8 is lit when the switch is not actuated): a) Switch contacts do not open when lever is actuated b) Wiring to switch is 'short-circuit'
Out of Service	The elevator successfully completes the initializing sequence after a power cycle or main door closure.  When attempting to do a vend the elevator goes to the top limit switch and stops. GVC sends a reset and subsequently there could be varying errors. GVC continues to issue resets several times before the system is ultimately put out of service.	EFL 99  EFL 5 EFL 8 n/n	Elevator Motor Encoder #1 (Green/White wire): a) Check connection at motor b) Check connection at elevator control board c) Faulty/Open Circuit encoder, replace motor
Out of Service	In most cases the initializing sequence after a power cycle or door closure is successful; the elevator sometimes stops momentarily halfway down. When attempting a vend it is possible that an item is dispensed from the shelf without the elevator moving, as if the elevator functionality had not been enabled. After this a 2 <sup>nd</sup> vend can result in nothing	All possible: EFL 3 EFL 4 EFL 5 EFL 6 EFL 7	Elevator Motor Encoder #2 (Red/White wire): a) Check connection at motor b) Check connection at elevator control board c) Faulty/Open Circuit encoder, replace motor

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Problem	Symptoms	Error Code/s	Possible Cause/s
	vending and the elevator starts to pulse between PARK & STANDBY indefinitely.	EFL 8 n/n EFL 99	
Out of Service	Power cycle with elevator is in the STANDBY position with main door closed – Baffle closes, elevator moves to VEND then immediately to STANDBY, baffle opens and elevator starts moving up and stops shortly after (top of elevator is approx. 1” above the bottom of the glass)	EFL 7	Elevator Motor Encoders #1 & #2 (Green/White & Red/White wires): a) Check connections at motor b) Check connections at elevator control board c) Faulty encoders, replace motor
Out of Service	Power cycle with elevator is in the STANDBY position with main door closed - Elevator moves to PARK, baffle moves out, elevator moves to VEND, elevator moves to STANDBY, baffle moves in, elevator to PARK then immediately to STANDBY. The above is repeated 2 further times before system goes out of service.	EFL 8 0/5 EFL 99	Top Limit Switch (Orange & Black wires, GREEN LED D13 is lit when the switch is not actuated): a) Check connections at switch b) Check connections at elevator control board c) Switch open-circuit/damaged, replace switch
Out of Service	Power cycle with elevator is in the STANDBY position with main door closed – The elevator & baffle perform normal process at the start of the initializing sequence, then the elevator ascends and hits frame at top and stops/stalls. 2 further resets are issued which results in the same behavior, elevator remains at top of frame and goes out of service. Condition is recoverable from a reset command	EFL 7	Top Limit Switch (Orange & Black wires, GREEN LED D13 is lit when the switch is not actuated): a) Switch contacts do not open when lever is actuated, replace switch b) Wiring to switch is ‘short-circuit’
Out of Service	Power cycle with elevator is in the STANDBY position with main door closed – The elevator moves to PARK, the baffle moves out to close. Baffle remains closed and elevator ascends and hits baffle and stops. GVC issues 2 further resets and the above is repeated before going out of service	EFL 8 0/5 EFL 7	Baffle ‘Open/Front’ Limit Switch (Yellow & Black wires, GREEN LED D10 is lit when the switch is not actuated): a) Check connections at switch b) Check connections at elevator control board c) Switch open-circuit/damaged, replace switch
Out of Service	Power cycle with elevator is in the STANDBY position with main door closed - Elevator moves to PARK, the baffle moves out and cycles 2 times then stops. GVC issues 2 further resets and the above is repeated before going out of service	EFL 5	Baffle ‘Open/Front’ Limit Switch (Yellow & Black wires, GREEN LED D10 is lit when the switch is not actuated): a) Switch contacts do not open when lever is actuated, replace switch b) Wiring to switch is ‘short-circuit’

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Problem	Symptoms	Error Code/s	Possible Cause/s
Baffle does not move	Power cycle with elevator is in the STANDBY position with main door closed – The elevator moves to PARK, the baffle doesn't move, the elevator goes to VEND and then to TOP LIMIT and returns to PARK – the reset is successful.	None	Baffle 'Closed' (rear) Limit Switch (Orange & Black wires, GREEN LED D11 is lit when the switch is not actuated): a) Check connections at switch b) Check connections at elevator control board c) Switch open-circuit/damaged, replace switch
Out of Service	Power cycle with elevator is in the STANDBY position with main door closed – The elevator goes to PARK, the baffle operates continuously for 3 ½ cycles. GVC issues 2 further resets and the above is repeated before going out of service	EFL 1	Baffle 'Closed' (rear) Limit Switch (Orange & Black wires, GREEN LED D11 is lit when the switch is not actuated): a) Switch contacts do not open when lever is actuated, replace switch b) Wiring to switch is 'short-circuit'
Baffle Closes when a selection is made	Power cycle with elevator is in the STANDBY position with main door closed – System will reset/initialize normally. When making a vend the baffle is closed and the elevator is sent to VEND and "Please Remove Your Product" is displayed; this simulates an item blocking the I-vend	None	I-Vend Input to GVC J8_Pin 5 (White wire): a) The RED LED on the 'hinge' side I-Vend board should be lit & steady? b) I-Vend is physically blocked in the elevator tray c) The I-Vend red filter lens is/are dirty d) The sides of the elevator tray have been bent/misaligned e) One or both of the I-Vend boards is/are faulty or damaged, replace as pair.
Machine may be 'Free Vending'	The elevator successfully completes the initializing sequence after a power cycle or main door closure – System will dispense the item from the shelf but it will not be detected and credit will not be deducted, the display shows "Please Select Another Selection". The elevator returns to STANDBY and item/s can be retrieved by unlocking the delivery door by pressing the # key	None	I-Vend Input to GVC J8_Pin 5 (White wire): a) The RED LED on the 'hinge' side I-Vend board should be lit and when something blocks/interrupts the array it will go out b) There is a short circuit in the wiring c) One or both of the I-Vend boards is/are faulty or damaged, replace as pair.
The Elevator or Baffle do not move or operate	No activity from the elevator system	None	Main Door Switch (GVC J3, Elevator Control Board J5, Black/Yellow & Black/Green wires): a) Check that the striker plate in the top RH corner of the cabinet is actuating the Door Switch mounted on the door b) Check that GVC J3 is connected and secure c) Check that Elevator Control Board J5 is connected and secure
Out of Service	Elevator in 'Standby' – Power-up/close main door and nothing happens	EFL 1	a) Check the 6-Way connector to the elevator motor is fully home/connected
The Elevator does not	Elevator in 'Park' - Power-up/close main	EFL 1	b) Set-up a voltage meter to take a 24VDC reading across pins 1 & 3 of the elevator motor connector

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Problem	Symptoms	Error Code/s	Possible Cause/s
operate	door, if baffle is fully open it will close, then nothing		on the elevator control board (P2), remove one wire from the main door switch, and a few seconds later after check to see if there is a voltage output to the motor. If there is 24-30VDC, replace the motor If no voltage replace the control board
	Elevator in 'Vend' - Power-up/close door: a) If baffle is fully open it cycles 1 ¾ times, this repeats 3 times and then stops. b) If baffle is not fully open it will not move	EFL 1 EFL 5	
Out of Service  (Only relates to Elevator Control Boards with pre Revision 1.07 Firmware – prior to July 2012)	Power-up/close main door with elevator & Baffle in any position, 'Out of Service' is displayed after a few moments, nothing happens.	Elevator Comm	<ul style="list-style-type: none"> <li>a) Check the DEX harness connecting between the GVC &amp; Elevator control boards are properly connected</li> <li>b) If there is a card system with its DEX plug engaged with the DEX socket in the machine, ensure that it is pushed <b>fully</b> home (if it is partially out the transmit line is shorted to ground)</li> <li>c) Having eliminated the above two possibilities, with the machine switched ON, remove the power connector (P1) from the elevator board, leave for 20 seconds, then reconnect and close door <b>If this solves the problem then the elevator firmware should be upgraded to &gt; Rev 1.07</b></li> <li>d) Having eliminated the above three possibilities, first replace the elevator control board, then the GVC</li> </ul>