



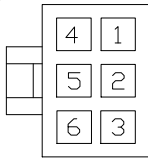
GUARDIAN 402 A - Symptom Flow Chart - Lift Interlock

Condition	Possible Causes	Action
<ul style="list-style-type: none"> No prove out of LED's 	<ul style="list-style-type: none"> Connections Power Ground Wake up LED panel Harness(es) Module 	<ul style="list-style-type: none"> Go to Pinpoint Test A
<ul style="list-style-type: none"> LED's not illuminated when conditions met 	<ul style="list-style-type: none"> Connections Harness(es) Lift power Lift not stowed Module 	<ul style="list-style-type: none"> Go to Pinpoint Test B
<ul style="list-style-type: none"> LED's properly illuminate but lift not operating 	<ul style="list-style-type: none"> Connections Harness(es) Lift Module 	<ul style="list-style-type: none"> Go to Pinpoint Test C
<ul style="list-style-type: none"> LED's flash lift does not operate 	<ul style="list-style-type: none"> Current draw of lift Module revision 	<ul style="list-style-type: none"> Go to Pinpoint Test D
<ul style="list-style-type: none"> Lift operates when safety conditions are not met 	<ul style="list-style-type: none"> Connections Harness(es) Lift Module 	<ul style="list-style-type: none"> Go to Pinpoint Test E
<ul style="list-style-type: none"> Vehicle will not crank 	<ul style="list-style-type: none"> Connections Harness(es) Starter Module 	<ul style="list-style-type: none"> Go to Pinpoint Test F
<ul style="list-style-type: none"> Vehicle cranks when conditions not met 	<ul style="list-style-type: none"> Connections Harness(es) Module 	<ul style="list-style-type: none"> Go to Pinpoint Test G
<ul style="list-style-type: none"> Lift operates intermittently 	<ul style="list-style-type: none"> Connections Harness(es) Park Park brake Lift Module 	<ul style="list-style-type: none"> Go to Pinpoint Test H

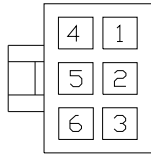
The following items are necessary for proper diagnosis:

- Digital multimeter (do not use a test lamp)
- Guardian 402 A documentation
(Available at www.intermotive.net)

PINPOINT TEST A: NO PROVE OUT OF LEDS

Test Step	Result/Action to Take
A1 Ensure that all connectors are installed correctly <ul style="list-style-type: none"> ▪ Carefully inspect module and harness(es) ▪ Verify correct harness connector in the correct module plug ▪ Refer to schematics in Guardian documentation 	Results _____ Yes Go to A2 No Review install instructions, reinstall all connectors in their proper position. Test system for normal operation.
A2 Ensure that all wires are in their correct connector cavity <ul style="list-style-type: none"> ▪ Carefully inspect all harness connectors ▪ Verify that each connector has the correct wire in each cavity ▪ Refer to schematics in Guardian documentation for wire colors 	Results _____ Yes Go to A3 No Contact InterMotive for assistance with harness
A3 Check power and grounds <ul style="list-style-type: none"> ▪ Key in the On position ▪ With only the lift harness and display harness plugged into module, measure voltage between pin 4 and pin 6 ▪ Measure voltage between pin 4 and pin 3 ▪ Red lead on pin 6 and pin 3 ▪ Black lead on pin 4 (back probe connector) <div style="text-align: center; margin: 10px 0;">  <p>Back of lift Connector</p> </div> <ul style="list-style-type: none"> ▪ Are voltages greater than 10v? 	Results _____ Yes Go to A5 No Go to A4
A4 Check fuse <ul style="list-style-type: none"> ▪ Inspect the 7.5 Amp inline fuse 	Results _____ Yes Go to A5 No Replace fuse; Retest system for normal operation
A5 Check LED display	Results _____

- Key in the On position
- Measure voltage between chassis ground and pin 1 of the display connector. (Back probe connector)



Back of display Connector

- Is voltage greater than 4.5v?

Results_____

Yes
Contact InterMotive for assistance with LED display

No
Contact InterMotive for assistance with harness

PINPOINT TEST B: LEDS NOT ILLUMINATED WHEN CONDITIONS MET

Test Step

B1 Ensure that all connectors are installed correctly

- Carefully inspect module and harness(es)
- Verify correct harness connector in the correct module plug
- Refer to schematics in Guardian documentation

Yes
Go to B2

Results_____

No
Review install instructions, reinstall all connectors in their proper positions. Test system for normal operation.

- Are all harness connectors properly installed into module?

Test Step

Result/Action to Take

B2 Ensure that all wires are in their correct connector cavity

- Carefully inspect all harness connectors
- Verify that each connector has the correct wire in correct cavity
- Refer to schematics in Guardian documentation for wire colors

Yes
Go to B3

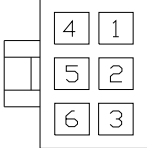
Results_____

No
Contact InterMotive for assistance with harness

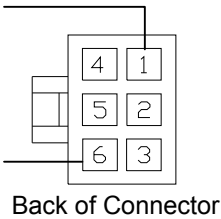
- Are all wires in their correct connector cavity?

Test Step	Result/Action to Take
<p>B3 Check operation</p> <ul style="list-style-type: none"> ▪ Key in the On position ▪ Perform each function, set park brake, open lift door <p>▪ Which LED does not illuminate?</p>	<p>Park brake - Go to B4</p> <p>No Start - Go to B7</p> <p>Lift door open - Go to B6</p>
Test Step	Result/Action to Take
<p>B4 Check park brake operation</p> <ul style="list-style-type: none"> ▪ Key in the On position ▪ Apply and release park brake <p>▪ Does the park brake light illuminate on the dash?</p>	<p>Results _____</p> <p>Yes Go to B5</p> <p>No Contact OEM dealer for assistance</p>
Test Step	Result/Action to Take
<p>B5 Check park brake operation</p> <ul style="list-style-type: none"> ▪ Key in the On position ▪ Apply and release park brake ▪ Measure voltage between chassis ground and pin 1 of the (vehicle 1 connector) <div data-bbox="472 898 683 1083" data-label="Diagram"> <p style="text-align: center;">Back of Connector</p> </div> <p>▪ Does the voltage read 0v with park brake applied and 12v with park brake released?</p>	<p>Results _____</p> <p>Yes Contact InterMotive for assistance with module</p> <p>No Contact InterMotive for assistance with harness</p>
Test Step	Result/Action to Take
<p>B6 Check lift door</p> <ul style="list-style-type: none"> ▪ Key in the On position ▪ At the 6 pin connector at module labeled lift, back probe pin 2 and jump to chassis ground <div data-bbox="440 1335 651 1520" data-label="Diagram"> <p style="text-align: center;">Back of Connector</p> </div> <p>▪ Does the lift door open LED illuminate?</p>	<p>Results _____</p> <p>Yes Inspect lift door switch or door adjustment</p> <p>No Contact InterMotive for assistance with module</p>
Test Step	Test Step
<p>B7 Check ignition power</p> <ul style="list-style-type: none"> ▪ At the module, vehicle 2 connector (back probe pin 1) ▪ Measure voltage between pin 1 and chassis ground <div data-bbox="440 1709 651 1894" data-label="Diagram"> <p style="text-align: center;">Back of Connector</p> </div> <p>▪ Is voltage greater than 10v</p>	<p>Results _____</p> <p>Yes Ensure that ignition switch is off</p> <p>No Contact InterMotive for assistance with module</p>

PINPOINT TEST C: LED'S PROPERLY ILLUMINATE BUT LIFT DOES NOT OPERATE

Test Step	Result/Action to Take
C1 Ensure that all connectors are installed correctly <ul style="list-style-type: none"> ▪ Carefully inspect module and harness(es) ▪ Verify correct harness connector in the correct module plug ▪ Refer to schematics in Guardian documentation 	<p style="text-align: right;">Results_____</p> <p>Yes Go to C2</p> <p>No Review install instructions, reinstall all connectors in their proper positions. Test system for normal operation.</p>
<ul style="list-style-type: none"> ▪ Are all harness connectors properly installed into module? 	
Test Step	Result/Action to Take
C2 Ensure that all wires are in their correct connector cavity <ul style="list-style-type: none"> ▪ Carefully inspect all harness connectors ▪ Verify that each connector has the correct wire in correct cavity ▪ Refer to schematics in Guardian documentation for wire colors 	<p style="text-align: right;">Results_____</p> <p>Yes Go to C3</p> <p>No Contact InterMotive for assistance with harness</p>
<ul style="list-style-type: none"> ▪ Are all wires in their correct connector cavity? 	
Test Step	Result/Action to Take
C3 Check lift operation <ul style="list-style-type: none"> ▪ Key in the Off position ▪ Ensure that all conditions met, park brake set, lift door open, vehicle in park ▪ Measure voltage at pin 1 of the lift harness connector (back probe) <div style="text-align: center; margin: 10px 0;">  <p>Back of Connector</p> </div>	<p style="text-align: right;">Results_____</p> <p>Yes Go to C4</p> <p>No Contact Intermotive for assistance with module</p>
<ul style="list-style-type: none"> ▪ Is voltage greater then 10v? 	
Test Step	Result/Action to Take
C4 Check lift operation <ul style="list-style-type: none"> ▪ Key in the Off position ▪ Measure voltage at the lift output at the lift (red wire) 	<p style="text-align: right;">Results_____</p> <p>Yes Contact lift manufacturer or installer</p> <p>No Contact InterMotive for assistance with lift harness</p>
<ul style="list-style-type: none"> ▪ Is voltage greater then 10v? 	

PINPOINT TEST D: LED'S FLASH, LIFT DOES NOT OPERATE

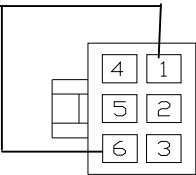
Test Step	Result/Action to Take
D1 Ensure that all connectors are installed correctly <ul style="list-style-type: none"> ▪ Carefully inspect module and harness(es) ▪ Verify correct harness connector in the correct module plug ▪ Refer to schematics in Guardian documentation 	<p style="text-align: right;">Results _____</p> <p>Yes Go to D2</p> <p>No Review install instructions, reinstall all connectors in their proper position. Test system for normal operation.</p>
<ul style="list-style-type: none"> ▪ Are all harness connectors properly installed into module? 	
Test Step	Result/Action to Take
D2 Ensure that all wires are in their correct connector cavity <ul style="list-style-type: none"> ▪ Carefully inspect all harness connectors ▪ Verify that each connector has the correct wire in correct cavity ▪ Refer to schematics in Guardian documentation for wire colors 	<p style="text-align: right;">Results _____</p> <p>Yes Go to D3</p> <p>No Contact InterMotive for assistance with harness</p>
<ul style="list-style-type: none"> ▪ Are all wires in their correct connector cavity? 	
Test Step	Result/Action to Take
E3 Check for overcurrent condition <ul style="list-style-type: none"> ▪ At the lift connector at module, using multimeter leads between pin 1 and pin 6 (back probe) ▪ Set scale on meter to 10Amp ▪ Activate lift <div style="text-align: center; margin: 10px 0;">  <p>Back of Connector</p> </div>	<p style="text-align: right;">Results _____</p> <p>Yes It will be necessary to install a relay on the lift output circuit</p> <p>No Contact InterMotive for assistance with module</p>
<ul style="list-style-type: none"> ▪ Is the current draw greater than 8 Amps during lift activation? 	

PINPOINT TEST E: LIFT OPERATES WHEN SAFETY CONDITIONS ARE NOT MET

Test Step	Result/Action to Take
E1 Ensure that all connectors are installed correctly <ul style="list-style-type: none"> ▪ Carefully inspect module and harness(es) ▪ Verify correct harness connector in the correct module plug ▪ Refer to schematics in Guardian documentation 	<p style="text-align: right;">Results _____</p> <p>Yes Go to E2</p> <p>No Review install instructions, reinstall all connectors in their proper position. Test system for normal operation.</p>
<ul style="list-style-type: none"> ▪ Are all harness connectors properly installed into module? 	

Test Step	Result/Action to Take
E2 Ensure that all wires are in their correct connector cavity <ul style="list-style-type: none"> Carefully inspect all harness connectors Verify that each connector has the correct wire in correct cavity Refer to schematics in Guardian documentation for wire colors 	<p>Results_____</p> <p>Yes Go to E3</p> <p>No Contact InterMotive for assistance with harness</p>
<ul style="list-style-type: none"> Are all wires in their correct connector cavity? 	

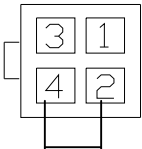
Test Step	Result/Action to Take
E3 Check lift operation <ul style="list-style-type: none"> Disconnect lift connector from Guardian module and attempt to operate lift 	<p>Results_____</p> <p>Yes Check for short to power on lift circuit or at the lift</p> <p>No Go to E4</p>
<ul style="list-style-type: none"> Does the lift operate? 	

Test Step	Result/Action to Take
E4 Check lift operation <ul style="list-style-type: none"> Disconnect lift connector from Guardian module and jump pin 1 to pin 6 <div style="text-align: center;">  <p>Back of Connector</p> </div>	<p>Results_____</p> <p>Yes Contact InterMotive for assistance with module</p> <p>No Contact InterMotive for assistance with lift harness or lift</p>
<ul style="list-style-type: none"> Does the lift operate? 	

PINPOINT TEST F: VEHICLE WILL NOT CRANK

Test Step	Result/Action to Take
F1 Ensure that all connectors are installed correctly <ul style="list-style-type: none"> Carefully inspect module and harness(es) Verify correct harness connector in the correct module plug Refer to schematics in Guardian documentation 	<p>Results_____</p> <p>Yes Go to F2</p> <p>No Review install instructions, reinstall all connectors in their proper position. Test system for normal operation.</p>
<ul style="list-style-type: none"> Are all harness connectors properly installed into module? 	

Test Step	Result/Action to Take
F2 Ensure that all wires are in their correct connector cavity <ul style="list-style-type: none"> Carefully inspect all harness connectors Verify that each connector has the correct wire in correct cavity Refer to schematics in Guardian documentation for wire colors 	<p>Results_____</p> <p>Yes Go to F3</p> <p>No Contact InterMotive for assistance with harness</p>
<ul style="list-style-type: none"> Are all wires in their correct connector cavity? 	

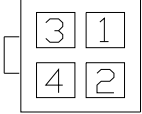
Test Step	Result/Action to Take
F3 Check starter circuit <ul style="list-style-type: none"> Disconnect vehicle 2 connector from module, using a jumper wire, jump pin 2 to pin 4 Verify lift is fully stowed Attempt to crank engine <div style="text-align: center;">  <p>Back of Connector</p> </div> <ul style="list-style-type: none"> Does vehicle crank? 	<p style="text-align: right;">Results _____</p> <p>Yes Contact InterMotive for assistance with module</p> <p>No Go to F4</p>

Test Step	Result/Action to Take
F4 Check stater circuit <ul style="list-style-type: none"> Using a jumper wire of the correct gauge jump at the two solder joints between the OEM starter harness and the InterMotive vehicle 2 harness Attempt to crank engine <ul style="list-style-type: none"> Does vehicle crank? 	<p style="text-align: right;">Results _____</p> <p>Yes Contact InterMotive for assistance with harness</p> <p>No Contact OEM dealer</p>

PINPOINT TEST G: VEHICLE CRANKS WHEN CONDITIONS NOT MET

Test Step	Result/Action to Take
G1 Ensure that all connectors are installed correctly <ul style="list-style-type: none"> Carefully inspect module and harness(es) Verify correct harness connector in the correct module plug Refer to schematics in Guardian documentation <ul style="list-style-type: none"> Are all harness connectors properly installed into module? 	<p style="text-align: right;">Results _____</p> <p>Yes Go to G2</p> <p>No Review install instructions, reinstall all connectors in their proper position. Test system for normal operation.</p>

Test Step	Result/Action to Take
G2 Ensure that all wires are in their correct connector cavity <ul style="list-style-type: none"> Carefully inspect all harness connectors Verify that each connector has the correct wire in correct cavity Refer to schematics in Guardian documentation for wire colors <ul style="list-style-type: none"> Are all wires in their correct connector cavity? 	<p style="text-align: right;">Results _____</p> <p>Yes Go to G3</p> <p>No Contact InterMotive for assistance with harness</p>

Test Step	Result/Action to Take
<p>G3 Check starter circuit</p> <ul style="list-style-type: none"> Disconnect vehicle 2 connector from module Attempt to crank engine <div style="text-align: center;">  <p>Back of Connector</p> </div> <ul style="list-style-type: none"> Will vehicle crank engine? 	<p style="text-align: right;">Results_____</p> <p>Yes Contact OEM</p> <p>No Contact InterMotive for assistance with module</p>

PINPOINT TEST H: LIFT OPERATES INTERMITTENTLY

Test Step	Result/Action to Take
<p>H1 Check lift operation</p> <ul style="list-style-type: none"> Observe LED's when lift will not operate <ul style="list-style-type: none"> What does the LED panel display? 	<p>No LED's illuminated - Go to pinpoint test A</p> <p>LED's flash - Go to pinpoint test E</p>