



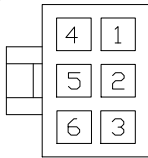
GUARDIAN 402 A - Symptom Flow Chart - Lift Interlock

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

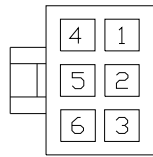
The following items are necessary for proper diagnosis:

- 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.
<ul style="list-style-type: none"> ▪ Are all harness connectors properly installed into module? 	
Test Step	Result/Action to Take
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
<ul style="list-style-type: none"> ▪ Are all wires in their correct connector cavity? 	
Test Step	Result/Action to Take
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
Test Step	Result/Action to Take
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
<ul style="list-style-type: none"> ▪ Is the 7.5 Amp inline fuse good? 	
Test Step	Result/Action to Take
A5 Check LED display	

- 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

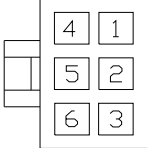
Results_____

No
Contact InterMotive for assistance with harness

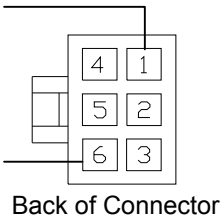
- Are all wires in their correct connector cavity?

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

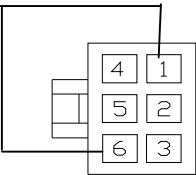
Test Step	Result/Action to Take
D1 Ensure that all connectors are installed correctly <ul style="list-style-type: none"> ▪ Carefully inspect module and harness(es) ▪ Verify correct harness connector in the correct module plug ▪ Refer to schematics in Guardian documentation 	<p style="text-align: right;">Results _____</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> <ul style="list-style-type: none"> ▪ Is the current draw greater than 8 Amps during lift activation? 	<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>

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? 	

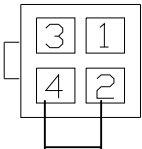
Test Step	Result/Action to Take
E3 Check lift operation <ul style="list-style-type: none"> Disconnect lift connector from Guardian module and attempt to operate lift 	<p>Results_____</p> <p>Yes Check for short to power on lift circuit or at the lift</p> <p>No Go to E4</p>
<ul style="list-style-type: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

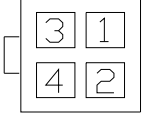
Test Step	Result/Action to Take
F3 Check starter circuit <ul style="list-style-type: none"> Disconnect vehicle 2 connector from module, using a jumper wire, jump pin 2 to pin 4 Verify lift is fully stowed Attempt to crank engine <div style="text-align: center;">  <p>Back of Connector</p> </div> <ul style="list-style-type: 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>