



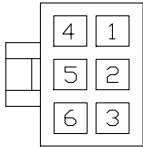
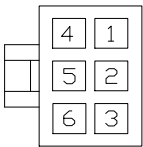
## GUARDIAN 602 A - Symptom Flow Chart - Lift Interlock

Condition	Possible Causes	Action
<ul style="list-style-type: none"> <li>No prove out of LED's</li> </ul>	<ul style="list-style-type: none"> <li>Connections</li> <li>Power</li> <li>Ground</li> <li>Wake up</li> <li>LED panel</li> <li>Harness(es)</li> <li>Module</li> </ul>	<ul style="list-style-type: none"> <li>Go to Pinpoint Test A</li> </ul>
<ul style="list-style-type: none"> <li>LED's not illuminated when conditions met</li> </ul>	<ul style="list-style-type: none"> <li>Connections</li> <li>Harness(es)</li> <li>Lift power</li> <li>Lift not stowed</li> <li>Module</li> </ul>	<ul style="list-style-type: none"> <li>Go to Pinpoint Test B</li> </ul>
<ul style="list-style-type: none"> <li>LED's properly illuminate but lift not operating</li> </ul>	<ul style="list-style-type: none"> <li>Connections</li> <li>Harness(es)</li> <li>Lift</li> <li>Module</li> </ul>	<ul style="list-style-type: none"> <li>Go to Pinpoint Test C</li> </ul>
<ul style="list-style-type: none"> <li>LED's properly illuminate but shifter does not lock</li> </ul>	<ul style="list-style-type: none"> <li>Connections</li> <li>Harness(es)</li> <li>OEM-shift lock solenoid</li> <li>OEM-fuse</li> <li>Module</li> </ul>	<ul style="list-style-type: none"> <li>Go to Pinpoint Test D</li> </ul>
<ul style="list-style-type: none"> <li>LED's flash lift does not operate</li> </ul>	<ul style="list-style-type: none"> <li>Current draw of lift</li> <li>Module revision</li> </ul>	<ul style="list-style-type: none"> <li>Go to Pinpoint Test E</li> </ul>
<ul style="list-style-type: none"> <li>Lift operates when safety conditions are not met</li> </ul>	<ul style="list-style-type: none"> <li>Connections</li> <li>Harness(es)</li> <li>Lift</li> <li>Module</li> </ul>	<ul style="list-style-type: none"> <li>Go to Pinpoint Test F</li> </ul>
<ul style="list-style-type: none"> <li>Shifter never locks</li> </ul>	<ul style="list-style-type: none"> <li>Connections</li> <li>Harness(es)</li> <li>OEM-shift lock solenoid</li> <li>OEM-fuse</li> <li>Module</li> </ul>	<ul style="list-style-type: none"> <li>Go to Pinpoint Test G</li> </ul>
<ul style="list-style-type: none"> <li>Can not shift out of park</li> </ul>	<ul style="list-style-type: none"> <li>Connections</li> <li>Harness(es)</li> <li>OEM-shift lock solenoid</li> <li>Lift stowed circuit</li> <li>Module</li> </ul>	<ul style="list-style-type: none"> <li>Go to Pinpoint Test H</li> </ul>
<ul style="list-style-type: none"> <li>Lift operates intermittently</li> </ul>	<ul style="list-style-type: none"> <li>Connections</li> <li>Harness(es)</li> <li>Park</li> <li>Park brake</li> <li>Lift</li> <li>Module</li> </ul>	<ul style="list-style-type: none"> <li>Go to Pinpoint Test J</li> </ul>

The following items are necessary for proper diagnosis:

- Digital multimeter (do not use a test lamp)
- Guardian 602 A documentation  
(Available at [www.intermotive.net](http://www.intermotive.net))

# PINPOINT TEST A: NO PROVE OUT OF LEDS

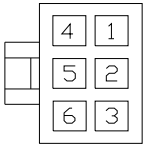
Test Step	Result/Action to Take
<b>A1 Ensure that all connectors are installed correctly</b> <ul style="list-style-type: none"> <li>▪ Carefully inspect module and harness(es)</li> <li>▪ Verify correct harness connector in the correct module plug</li> <li>▪ Refer to schematics in Guardian documentation</li> </ul>	Results _____  Yes Go to A2  No Review install instructions, reinstall all connectors in their proper position. Test system for normal operation.
<b>A2 Ensure that all wires are in their correct connector cavity</b> <ul style="list-style-type: none"> <li>▪ Carefully inspect all harness connectors</li> <li>▪ Verify that each connector has the correct wire in each cavity</li> <li>▪ Refer to schematics in Guardian documentation for wire colors</li> </ul>	Results _____  Yes Go to A3  No Contact InterMotive for assistance with harness
<b>A3 Check power and grounds</b> <ul style="list-style-type: none"> <li>▪ Key in the On position</li> <li>▪ With only the lift harness and display harness plugged into module, measure voltage between pin 4 and pin 6</li> <li>▪ Measure voltage between pin 4 and pin 3</li> <li>▪ Red lead on pin 6 and pin 3</li> <li>▪ Black lead on pin 4 (back probe connector)</li> </ul> <div style="text-align: center; margin: 10px 0;">  <p>Back of lift Connector</p> </div> <ul style="list-style-type: none"> <li>▪ Are voltages greater than 10v?</li> </ul>	Results _____  Yes Go to A5  No Go to A4
<b>A4 Check fuse</b> <ul style="list-style-type: none"> <li>▪ Inspect the 7.5 Amp inline fuse</li> </ul>	Results _____  Yes Go to A5  No Replace fuse; Retest system for normal operation
<b>A5 Check LED display</b> <ul style="list-style-type: none"> <li>▪ Key in the On position</li> <li>▪ Measure voltage between chassis ground and pin 1 of the display connector (Back probe connector)</li> </ul> <div style="text-align: center; margin: 10px 0;">  <p>Back of display Connector</p> </div> <ul style="list-style-type: none"> <li>▪ Is voltage greater than 4.5v?</li> </ul>	Results _____  Yes Contact InterMotive for assistance with LED display  No Contact InterMotive for assistance with harness

## PINPOINT TEST B: LEDES NOT ILLUMINATED WHEN CONDITIONS MET

Test Step	
<b>B1 Ensure that all connectors are installed correctly</b> <ul style="list-style-type: none"> <li>▪ Carefully inspect module and harness(es)</li> <li>▪ Verify correct harness connector in the correct module plug</li> <li>▪ Refer to schematics in Guardian documentation</li> </ul>	<p>Yes Go to B2</p> <p style="text-align: right;">Results_____</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"> <li>▪ Are all harness connectors properly installed into module?</li> </ul>	
Test Step	Result/Action to Take
<b>B2 Ensure that all wires are in their correct connector cavity</b> <ul style="list-style-type: none"> <li>▪ Carefully inspect all harness connectors</li> <li>▪ Verify that each connector has the correct wire in correct cavity</li> <li>▪ Refer to schematics in Guardian documentation for wire colors</li> </ul>	<p>Yes Go to B3</p> <p style="text-align: right;">Results_____</p> <p>No Contact InterMotive for assistance with harness</p>
<ul style="list-style-type: none"> <li>▪ Are all wires in their correct connector cavity?</li> </ul>	
Test Step	Result/Action to Take
<b>B3 Check operation</b> <ul style="list-style-type: none"> <li>▪ Key in the On position</li> <li>▪ Perform each function, set park brake, open lift door</li> </ul>	<p>Park brake - Go to B4</p> <p>Park - Go to B7</p> <p>Lift door open - Go to B6</p>
<ul style="list-style-type: none"> <li>▪ Which LED does not illuminate?</li> </ul>	

Test Step	Result/Action to Take
<p><b>B4 Check park brake operation</b></p> <ul style="list-style-type: none"> <li>▪ Key in the On position</li> <li>▪ Apply and release park brake</li> </ul>          <ul style="list-style-type: none"> <li>▪ Does the park brake light illuminate on the dash?</li> </ul>	<p>Results _____</p> <p>Yes Go to B5</p> <p>No Contact OEM dealer for assistance</p>
Test Step	Result/Action to Take
<p><b>B5 Check park brake operation</b></p> <ul style="list-style-type: none"> <li>▪ Key in the On position</li> <li>▪ Apply and release park brake</li> <li>▪ Measure voltage between chassis ground and pin 1 of the (vehicle 1 connector)</li> </ul> <div data-bbox="560 569 699 709" style="text-align: center;"> </div> <p style="text-align: center;">Back of Connector</p>          <ul style="list-style-type: none"> <li>▪ Does the voltage read 0v with park brake applied and 12v with park brake released?</li> </ul>	<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><b>B6 Check lift door</b></p> <ul style="list-style-type: none"> <li>▪ Key in the On position</li> <li>▪ At the 6 pin connector at module labeled lift, back probe pin 2 and jump to chassis ground</li> </ul> <div data-bbox="500 978 690 1119" style="text-align: center;"> </div> <p style="text-align: center;">Back of Connector</p>          <ul style="list-style-type: none"> <li>▪ Does the lift door open LED illuminate?</li> </ul>	<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><b>B7 Check park circuit</b></p> <ul style="list-style-type: none"> <li>▪ At the vehicle 1 connector at module, measure voltage at pin 4 (back probe connector)</li> </ul> <div data-bbox="581 1312 721 1453" style="text-align: center;"> </div> <p style="text-align: center;">Back of Connector</p>          <ul style="list-style-type: none"> <li>▪ Is there 12v in park only?</li> </ul>	<p>Results _____</p> <p>Yes Contact InterMotive for assistance with module</p> <p>No Contact InterMotive for assistance with harness</p>
<b>PINPOINT TEST C: LED's PROPERLY ILLUMINATE BUT LIFT DOES NOT OPERATE</b>	
Test Step	Result/Action to Take
<p><b>C1 Ensure that all connectors are installed correctly</b></p> <ul style="list-style-type: none"> <li>▪ Carefully inspect module and harness(es)</li> <li>▪ Verify correct harness connector in the correct module plug</li> <li>▪ Refer to schematics in Guardian documentation</li> </ul>          <ul style="list-style-type: none"> <li>▪ Are all harness connectors properly installed into module?</li> </ul>	<p>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>

Test Step	Result/Action to Take
<b>C2 Ensure that all wires are in their correct connector cavity</b> <ul style="list-style-type: none"> <li>Carefully inspect all harness connectors</li> <li>Verify that each connector has the correct wire in correct cavity</li> <li>Refer to schematics in Guardian documentation for wire colors</li> </ul>	<p>Results _____</p> <p>Yes Go to C3</p> <p>No Contact InterMotive for assistance with harness</p>
<ul style="list-style-type: none"> <li>Are all wires in their correct connector cavity?</li> </ul>	

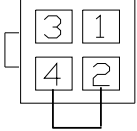
Test Step	Result/Action to Take
<b>C3 Check lift operation</b> <ul style="list-style-type: none"> <li>Key in the On or Off position</li> <li>Ensure that all conditions met, park brake set, lift door open, vehicle in park</li> <li>Measure voltage at pin 1 of the lift harness connector (back probe)</li> </ul>	<p>Results _____</p> <p>Yes Go to C4</p> <p>No Contact Intermotive for assistance with module</p>
 <p>Back of Connector</p> <ul style="list-style-type: none"> <li>Is voltage greater than 10v?</li> </ul>	

Test Step	Result/Action to Take
<b>C4 Check lift operation</b> <ul style="list-style-type: none"> <li>Key in the On position</li> <li>Measure voltage at the lift output at the lift (red wire)</li> </ul>	<p>Results _____</p> <p>Yes Contact left manufacturer or installer</p> <p>No Contact InterMotive for assistance with lift harness</p>
<ul style="list-style-type: none"> <li>Is voltage greater than 10v?</li> </ul>	

**PINPOINT TEST D: LEDS PROPERLY ILLUMINATE, BUT SHIFTER DOES NOT LOCK**

Test Step	Result/Action to Take
<b>D1 Ensure that all connectors are installed correctly</b> <ul style="list-style-type: none"> <li>Carefully inspect module and harness(es)</li> <li>Verify correct harness connector in the correct module plug</li> <li>Refer to schematics in Guardian documentation</li> </ul>	<p>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"> <li>Are all harness connectors properly installed into module?</li> </ul>	

Test Step	Result/Action to Take
<b>D2 Ensure that all wires are in their correct connector cavity</b> <ul style="list-style-type: none"> <li>Carefully inspect all harness connectors</li> <li>Verify that each connector has the correct wire in correct cavity</li> <li>Refer to schematics in Guardian documentation for wire colors</li> </ul>	<p>Yes Results _____</p> <p>Go to D3</p> <p>No</p> <p>Contact InterMotive for assistance with harness</p>
<ul style="list-style-type: none"> <li>Are all wires in their correct connector cavity?</li> </ul>	

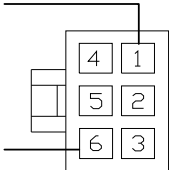
Test Step	Result/Action to Take
<b>D3 Check shift lock solenoid</b> <ul style="list-style-type: none"> <li>Disconnect vehicle 2 connector from module, using a jumper wire, jump pin 2 to pin 4</li> <li>Key in the On position</li> <li>Service brake not applied</li> </ul>	<p>Yes Results _____</p> <p>Contact InterMotive for assistance with module</p> <p>No</p> <p>Go to D4</p>
<div style="text-align: center;">  <p>Back of Connector</p> </div> <ul style="list-style-type: none"> <li>Does shift lock solenoid lock gear selector?</li> </ul>	

Test Step	Result/Action to Take
<b>D4 Check shift lock solenoid</b> <ul style="list-style-type: none"> <li>Remove Guardian gray T harness, and reinstall OEM harness</li> <li>Key in the On position</li> <li>Service brake not applied</li> </ul>	<p>Results _____</p> <p>Yes</p> <p>Contact InterMotive for assistance with harness</p> <p>No</p> <p>Contact OEM dealer</p>
<ul style="list-style-type: none"> <li>Does shift lock solenoid lock gear selector?</li> </ul>	

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

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

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

Test Step	Result/Action to Take
<b>E3 Check for overcurrent condition</b> <ul style="list-style-type: none"> <li>At the lift connector at module, using multimeter leads to pin 1 and pin 6</li> <li>Disconnect lift connector from module</li> <li>Set scale on meter to 10Amp</li> <li>Activate lift</li> </ul>	<p>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>
 <p>Back of Connector</p> <ul style="list-style-type: none"> <li>Is the current draw greater than 8 Amps during lift activation?</li> </ul>	

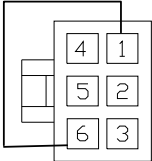
## PINPOINT TEST F: LIFT OPERATES WHEN SAFETY CONDITIONS ARE NOT MET

Test Step	Result/Action to Take
<b>F1 Ensure that all connectors are installed correctly</b> <ul style="list-style-type: none"> <li>Carefully inspect module and harness(es)</li> <li>Verify correct harness connector in the correct module plug</li> <li>Refer to schematics in Guardian documentation</li> </ul>	<p>Yes Go to F2</p> <p>Results _____</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"> <li>Are all harness connectors properly installed into module?</li> </ul>	

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



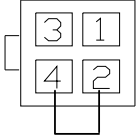
Test Step	Result/Action to Take
<b>F3 Check lift operation</b>	
<ul style="list-style-type: none"> <li>Disconnect lift connector from Guardian module and attempt to operate lift</li> </ul>	<p>Results_____</p> <p>Yes Check for short to power on lift circuit or at the lift</p> <p>No Go to F4</p>
<ul style="list-style-type: none"> <li>Does the lift operate?</li> </ul>	

Test Step	Result/Action to Take
<b>F4 Check lift operation</b>	
<ul style="list-style-type: none"> <li>Disconnect lift connector from Guardian module and jump pin 1 and pin 6</li> </ul>	<p>Results_____</p> <p>Yes Contact InterMotive for assistance with module</p> <p>No Contact InterMotive for assistance with lift harness or lift</p>
 <p>Back of Connector</p>	
<ul style="list-style-type: none"> <li>Does the lift operate?</li> </ul>	

## PINPOINT TEST G: SHIFTER NEVER LOCKS

Test Step	Result/Action to Take
<b>G1 Ensure that all connectors are installed correctly</b>	
<ul style="list-style-type: none"> <li>Carefully inspect module and harness(es)</li> <li>Verify correct harness connector in the correct module plug</li> <li>Refer to schematics in Guardian documentation</li> </ul>	<p>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>
<ul style="list-style-type: none"> <li>Are all harness connectors properly installed into module?</li> </ul>	

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

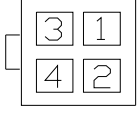
Test Step	Result/Action to Take
<b>G3 Check shift lock</b> <ul style="list-style-type: none"> <li>Disconnect vehicle 2 connector from module, using a jumper jump pin 2 to pin 4</li> <li>Key in the On position</li> <li>Service brake not applied</li> </ul> 	<p>Results _____</p> <p>Yes Contact InterMotive for assistance with module</p> <p>No Go to G4</p>

<b>G4 Check shift lock solenoid</b> <ul style="list-style-type: none"> <li>Remove Guardian gray T harness, and reinstall OEM harness</li> <li>Key in the On position</li> <li>Service brake not applied</li> </ul>	<p>Results _____</p> <p>Yes Contact InterMotive for assistance with harness</p> <p>No Contact OEM dealer</p>
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## PINPOINT TEST H: CANNOT SHIFT OUT OF PARK

Test Step	Result/Action to Take
<b>H1 Ensure that all connectors are installed correctly</b> <ul style="list-style-type: none"> <li>Carefully inspect module and harness(es)</li> <li>Verify correct harness connector in the correct module plug</li> <li>Refer to schematics in Guardian documentation</li> </ul>	<p>Results _____</p> <p>Yes Go to H2</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
<b>H2 Ensure that all wires are in their correct connector cavity</b> <ul style="list-style-type: none"> <li>Carefully inspect all harness connectors</li> <li>Verify that each connector has the correct wire in correct cavity</li> <li>Refer to schematics in Guardian documentation for wire colors</li> </ul>	<p>Results _____</p> <p>Yes Go to H3</p> <p>No Contact InterMotive for assistance with harness</p>

Test Step	Result/Action to Take
<b>H3 Check shift lock solenoid</b> <ul style="list-style-type: none"> <li>Disconnect vehicle 2 connector from module</li> <li>Key in the On position</li> <li>Apply service brake</li> </ul> 	<p>Results _____</p> <p>Yes Contact InterMotive for assistance with module</p> <p>No Go to H4</p>

Test Step	Result/Action to Take
<p>H4 Check shift lock solenoid</p> <ul style="list-style-type: none"> <li>▪ Remove Guardian gray T harness, reinstall OEM harness</li> <li>▪ Key in the On position</li> <li>▪ Apply service brake</li> </ul> <ul style="list-style-type: none"> <li>▪ Can vehicle be shifted out of park?</li> </ul>	<p style="text-align: right;">Results_____</p> <p>Yes Contact InterMotive for assistance with harness</p> <p>No Contact OEM dealer</p>

**PINPOINT TEST J: LIFT OPERATES INTERMITTENTLY**

Test Step	Result/Action to Take
<p>J1 Check lift operation</p> <ul style="list-style-type: none"> <li>▪ Observe LED's when lift will not operate</li> </ul> <ul style="list-style-type: none"> <li>▪ What does the LED panel display?</li> </ul>	<p>No LED's illuminated - Go to pinpoint test A</p> <p>LED's flash - Go to pinpoint test E</p>