



GUARDIAN 601 A - Symptom Flow Chart - Lift Interlock

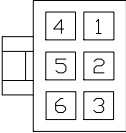
Condition	Possible Causes	Action
<ul style="list-style-type: none"> • No prove out of LED's 	<ul style="list-style-type: none"> • Connections • Power • Ground • Wake up • LED panel • Harness(es) • Module 	<ul style="list-style-type: none"> • Go to Pinpoint Test A
<ul style="list-style-type: none"> • 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 properly illuminate but shifter does not lock 	<ul style="list-style-type: none"> • Connections • Harness(es) • OEM-shift lock solenoid • OEM-fuse • Module 	<ul style="list-style-type: none"> • Go to Pinpoint Test D
<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 E
<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 F
<ul style="list-style-type: none"> • Shifter never locks 	<ul style="list-style-type: none"> • Connections • Harness(es) • OEM-shift lock solenoid • OEM-fuse • Module 	<ul style="list-style-type: none"> • Go to Pinpoint Test G

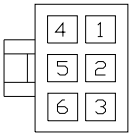
<ul style="list-style-type: none"> ▪ Cannot shift out of park 	<ul style="list-style-type: none"> ▪ Connections ▪ Harness(es) ▪ OEM-shift lock solenoid ▪ Lift stowed circuit ▪ Module 	<ul style="list-style-type: none"> ▪ Go to Pinpoint Test H
<ul style="list-style-type: none"> ▪ Lift operates intermittently 	<ul style="list-style-type: none"> ▪ Connections ▪ Harness(es) ▪ Park ▪ Park brake ▪ Lift ▪ Module 	<ul style="list-style-type: none"> ▪ Go to Pinpoint Test J

The following items are necessary for proper diagnosis:

- Digital multimeter (do not use a test lamp)
- Guardian 601A 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 <ul style="list-style-type: none"> ▪ Are all harness connectors properly installed into module? 	Results _____ Yes Go to A2 No Review install instructions, reinstall all connectors in their proper position. Test system for normal operation.
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 <ul style="list-style-type: none"> ▪ Are all wires in their correct connector cavity? 	Results _____ Yes Go to A3 No Contact InterMotive for assistance with harness
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 at 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 power at lift <ul style="list-style-type: none"> ▪ Measure voltage at lift ▪ Consult lift manufacturer for lift output circuit <ul style="list-style-type: none"> ▪ Is voltage greater than 10v? 	Results _____ Yes Go to A5 No Contact lift manufacturer or installer

Test Step	Result/Action to Take
A5 Check LED display	
<ul style="list-style-type: none"> ▪ Key in the On position ▪ Measure voltage between chassis ground and pin 1 of the display connector. (Back probe connector) <div style="text-align: center;">  <p>Back of display Connector</p> </div> <ul style="list-style-type: none"> ▪ Is voltage greater than 4.5v? 	<p style="text-align: center;">Results_____</p> <p>Yes Contact InterMotive for assistance with harness</p> <p>No Contact InterMotive for assistance with harness</p>

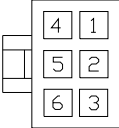
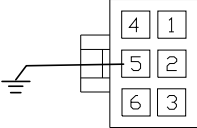
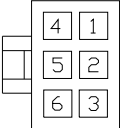
PINPOINT TEST B: LEDS NOT ILLUMINATED WHEN CONDITIONS MET

Test Step	Result/Action to Take
B1 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: center;">Results_____</p> <p>Yes Go to B2</p> <p>No Review install instructions, reinstall all connectors in their proper positions. Test system for normal operation.</p>

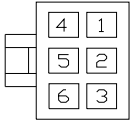
Test Step	Result/Action to Take
B2 Ensure that all wires are in their correct connector cavity	
<ul style="list-style-type: none"> ▪ Carefully inspect all harness connectors ▪ Verify that each connector has the correct wire in correct cavity ▪ Refer to schematics in Guardian documentation for wire colors <ul style="list-style-type: none"> ▪ Are all wires in their correct connector cavity? 	<p style="text-align: center;">Results_____</p> <p>Yes Go to B3</p> <p>No Contact InterMotive for assistance with harness</p>

Test Step	Result/Action to Take
B3 Check operation	
<ul style="list-style-type: none"> ▪ Key in the On position ▪ Perform each function, set park brake, unfold lift <ul style="list-style-type: none"> ▪ Which LED does not illuminate? 	<p>Lift power - Go to B4</p> <p>Lift not stowed - Go to B6</p>

Test Step	Result/Action to Take
B4 Check park brake operation	
<ul style="list-style-type: none"> ▪ Key in the On position ▪ Apply and release park brake <ul style="list-style-type: none"> ▪ Does the park brake light illuminate on the dash? 	<p style="text-align: center;">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 (back probe connector)  <p style="text-align: center;">Back of Connector</p> <ul style="list-style-type: none"> ▪ Does the voltage read 0v with park brake applied and 12v with park brake released 	<p style="text-align: center;">Results _____</p> <p>Yes Go to B7</p> <p>No Contact InterMotive for assistance with harness</p>
Test Step	Test Step
<p>B6 Check lift stowed signal</p> <ul style="list-style-type: none"> ▪ Key in the On position ▪ At the 6 pin connector at module labeled lift, back probe pin 5 and jump to chassis ground  <p style="text-align: center;">Back of Connector</p> <ul style="list-style-type: none"> ▪ Does the lift not stowed LED illuminate? 	<p style="text-align: center;">Results _____</p> <p>Yes Inspect lift stowed switch or lift adjustment</p> <p>No Contact InterMotive for assistance with module</p>
Test Step	Test Step
<p>B7 Check park circuit</p> <ul style="list-style-type: none"> ▪ At the vehicle 1 connector at module, measure voltage at pin 4 (back probe connector)  <p style="text-align: center;">Back of Connector</p> <ul style="list-style-type: none"> ▪ Is there 12v in park only? 	<p style="text-align: center;">Results _____</p> <p>Yes Contact InterMotive for assistance with module</p> <p>No Contact InterMotive for assistance with harness</p>
PINPOINT TEST C: LED's PROPERLY ILLUMINATE BUT LIFT DOES NOT OPERATE	
Test Step	Result/Action to Take
<p>C1 Ensure that all connectors are installed correctly</p> <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: center;">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>

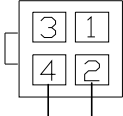
Test Step	Result/Action to Take
C2 Ensure that all wires are in their correct connector cavity <ul style="list-style-type: none"> Carefully inspect all harness connectors Verify that each connector has the correct wire in correct cavity Refer to schematics in Guardian documentation for wire colors 	<p>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 On or Off position Ensure that all conditions met, park brake set vehicle in park Measure voltage at pin 1 of the lift harness connector (back probe) 	<p>Results _____</p> <p>Yes Contact InterMotive for assistance with lift harness or lift</p> <p>No Contact InterMotive for assistance with module</p>
 <p>Back of Connector</p> <ul style="list-style-type: none"> Is voltage greater than 10v? 	

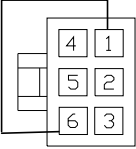
PINPOINT TEST D: LEDS PROPERLY ILLUMINATE, BUT SHIFTER DOES NOT LOCK

Test Step	Result/Action to Take
<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 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? 	

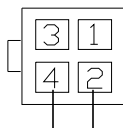
Test Step	Result/Action to Take
D2 Ensure that all wires are in their correct connector cavity <ul style="list-style-type: none"> Carefully inspect all harness connectors Verify that each connector has the correct wire in correct cavity Refer to schematics in Guardian documentation for wire colors 	<p>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
D3 Check shift lock solenoid <ul style="list-style-type: none"> Disconnect vehicle 2 connector from module, using a jumper jump pin 2 to pin 4 Key in the On position 	<p>Results _____</p> <p>Yes Contact InterMotive for assistance with module</p> <p>No Go to D4</p>
Test Step back of connector	Result/Action to Take
D4 Check shift lock solenoid <ul style="list-style-type: none"> Remove Guardian gray T harness, and reinstall OEM harness Key in the On position 	<p>Results _____</p> <p>Yes Contact InterMotive for assistance with harness</p> <p>No Contact OEM dealer</p>
<p>• Does shift lock solenoid lock gear selector?</p>	
<p>• Does shift lock solenoid lock gear selector?</p>	
<p>PINPOINT TEST E: LED'S FLASH LIFT DOES NOT OPERATE</p>	
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>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>
<p>• Are all harness connectors properly installed into module?</p>	
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>
<p>• Are all wires in their correct connector cavity?</p>	
Test Step	Result/Action to Take
E3 Check for overcurrent condition <ul style="list-style-type: none"> Carefully inspect and identify which lift harness has been installed Using the Braun or Ricon lift adapter, pull the fuse to install multimeter in series for current draw test. Set scale on meter to 10Amp Activate lift 	<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>• Is the current draw greater than 8 Amps during lift activation?</p>	

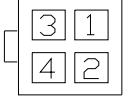
PINPOINT TEST F: LEDS OPERATES WHEN SAFETY CONDITIONS ARE NOT MET

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 <ul style="list-style-type: none"> ▪ Are all harness connectors properly installed into module? 	<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>
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 <ul style="list-style-type: none"> ▪ Are all wires in their correct connector cavity? 	<p>Yes Go to F3</p> <p>Results _____</p> <p>No Contact InterMotive for assistance with harness</p>
Test Step	Result/Action to Take
F3 Check lift operation <ul style="list-style-type: none"> ▪ Disconnect lift connector from Guardian module and attempt to operate lift <ul style="list-style-type: none"> ▪ Does the lift operate? 	<p>Results _____</p> <p>Yes Check for short to power on lift circuit or at the lift</p> <p>No Go to F4</p>
Test Step	Result/Action to Take
F4 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; margin: 10px 0;">  <p>Back of Connector</p> </div> <ul style="list-style-type: none"> ▪ Does the lift operate? 	<p>Results _____</p> <p>Yes Contact InterMotive for assistance with module</p> <p>No Contact InterMotive for assistance with lift harness or lift</p>

PINPOINT TEST G: SHIFTER NEVER LOCKS

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 	Results _____ Yes Go to G2 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
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 	Results _____ Yes Go to G3 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
G3 Check shift lock <ul style="list-style-type: none"> ▪ Disconnect vehicle 2 connector from module, using a jumper jump pin 2 to pin 4 ▪ Key in the On position <div style="text-align: center; margin: 10px 0;">  </div>	Results _____ Yes Contact InterMotive for assistance with module No Go to G4
<ul style="list-style-type: none"> ▪ Does shift lock solenoid lock gear selector? 	
Test Step	Result/Action to Take
G4 Check shift lock solenoid <ul style="list-style-type: none"> ▪ Remove Guardian gray T harness, and reinstall OEM harness ▪ Key in the On position 	Results _____ Yes Contact InterMotive for assistance with harness No Contact OEM dealer
<ul style="list-style-type: none"> ▪ Does shift lock solenoid lock gear selector? 	

PINPOINT TEST H: CANNOT SHIFT OUT OF PARK

Test Step	Result/Action to Take
H1 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 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
H2 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 H3</p> <p>No Contact InterMotive for assistance with harness</p>
Test Step	Result/Action to Take
H3 Check shift lock solenoid <ul style="list-style-type: none"> ▪ Disconnect vehicle 2 connector from module ▪ Key in the On position ▪ Apply service brake <div style="text-align: center; margin: 10px 0;">  </div> <ul style="list-style-type: none"> ▪ Can vehicle be shifted out of park? 	<p style="text-align: right;">Results _____</p> <p>Yes Contact InterMotive for assistance with module</p> <p>No Go to H4</p>
Test Step back of connector	Result/Action to Take
H4 Check shift lock solenoid <ul style="list-style-type: none"> ▪ Remove Guardian gray T harness, and reinstall OEM harness ▪ Key in the On position ▪ Apply service brake <ul style="list-style-type: none"> ▪ Can vehicle be shifted out of park? 	<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
J1 Check lift operation <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>