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# International Standard Series Mirror System Manual





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## Product Features

- ❑ Replaceable Components
- ❑ Minimal Diagnosis & Repair Time
- ❑ Spring-Loaded Fold-Away
- ❑ Independent Main and Convex Mirror Adjustment
- ❑ Self-Regulating Heaters

## Customer Support

Toll-Free Support Hotline  
1-888-MEKRA-4-U

Web-Accessible Service Manuals  
& Product Updates  
[www.lang-mekra.com](http://www.lang-mekra.com)

E-Mail  
[quality@lang-mekra.com](mailto:quality@lang-mekra.com)

Fax: (803) 337-5265

These Products May Be The Subject of Pending U.S. Patent Applications or May Be Covered By One or More of the Following U.S. Patents: 4,991,950 5,110,196 5,137,247 5,196,965 385,243 5,687,035 387,317



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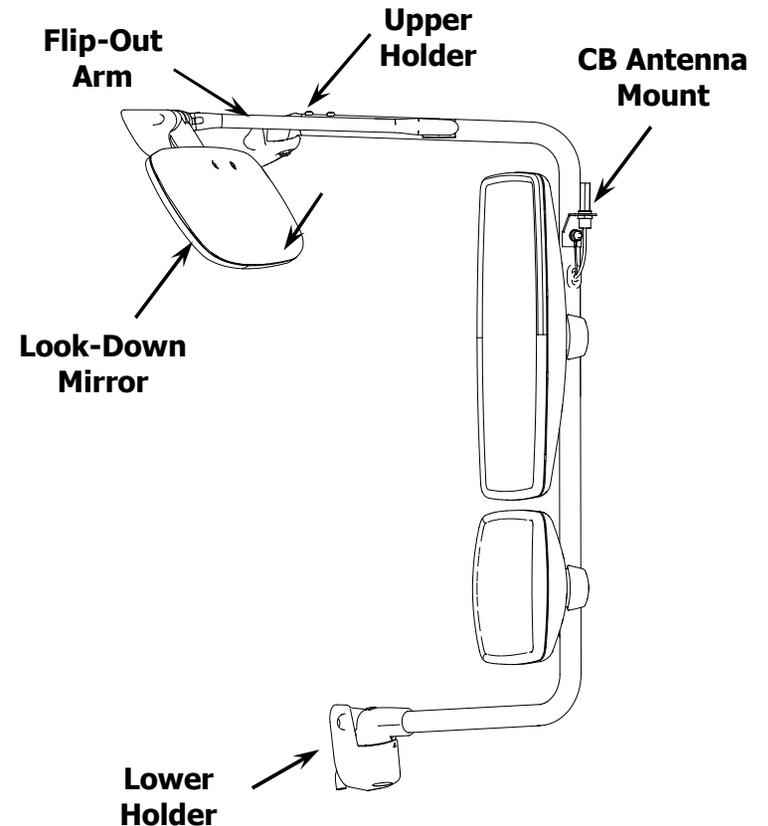
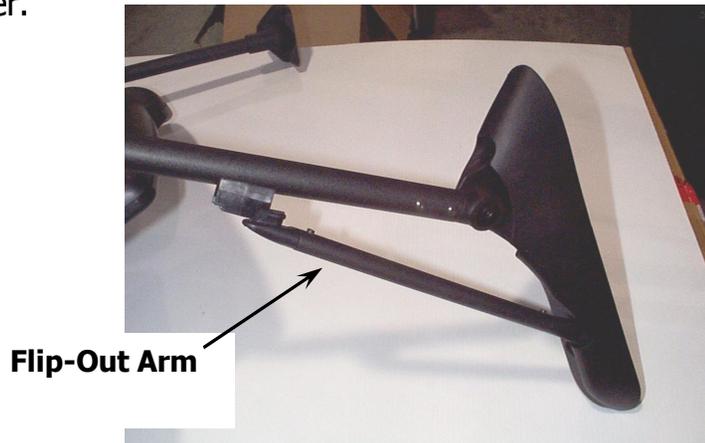


## (G.1) Removal of Complete Bracket Assembly

- 1) Remove antenna from antenna base.
- 2) Disconnect control cable and CB cable inside the cab.
- 3) Remove 3 screws from upper holder, using a T-40 driver. Be sure to hold the mirror steady to prevent damage or personal injury.

**Important! DO NOT use the flip-out arm as a handle to hold or carry the mirror!**

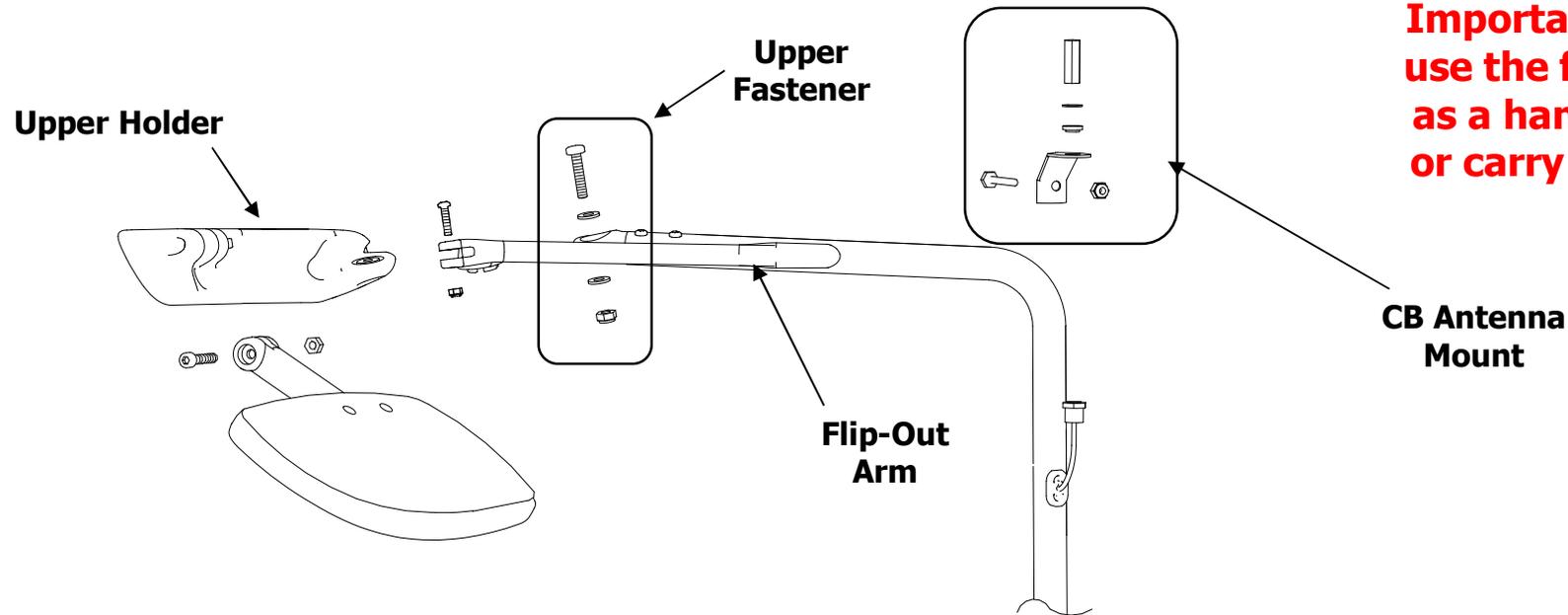
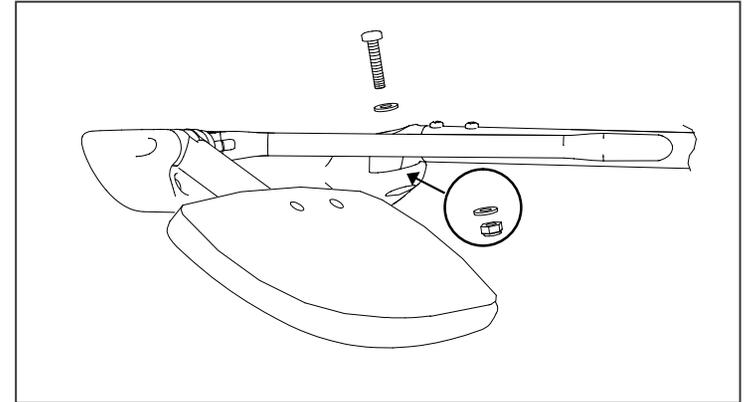
- 4) Remove the 3 screws from the lower holder, using a T-40 driver.



## (G.2.1) Changing the Upper Fastener Kit

**Important—hold the mirror and bracket system in place firmly throughout this process to avoid damaging the door or the mirror.**

1. Remove fastener kit, using a 13 mm socket and a 6 mm allen wrench. Hold the mirror in place to prevent it from falling.
2. Assemble upper fastener kit as shown.
3. Hand-tighten nut on bolt. Torque nut to 10 N-m (7.3 ft-lbs).



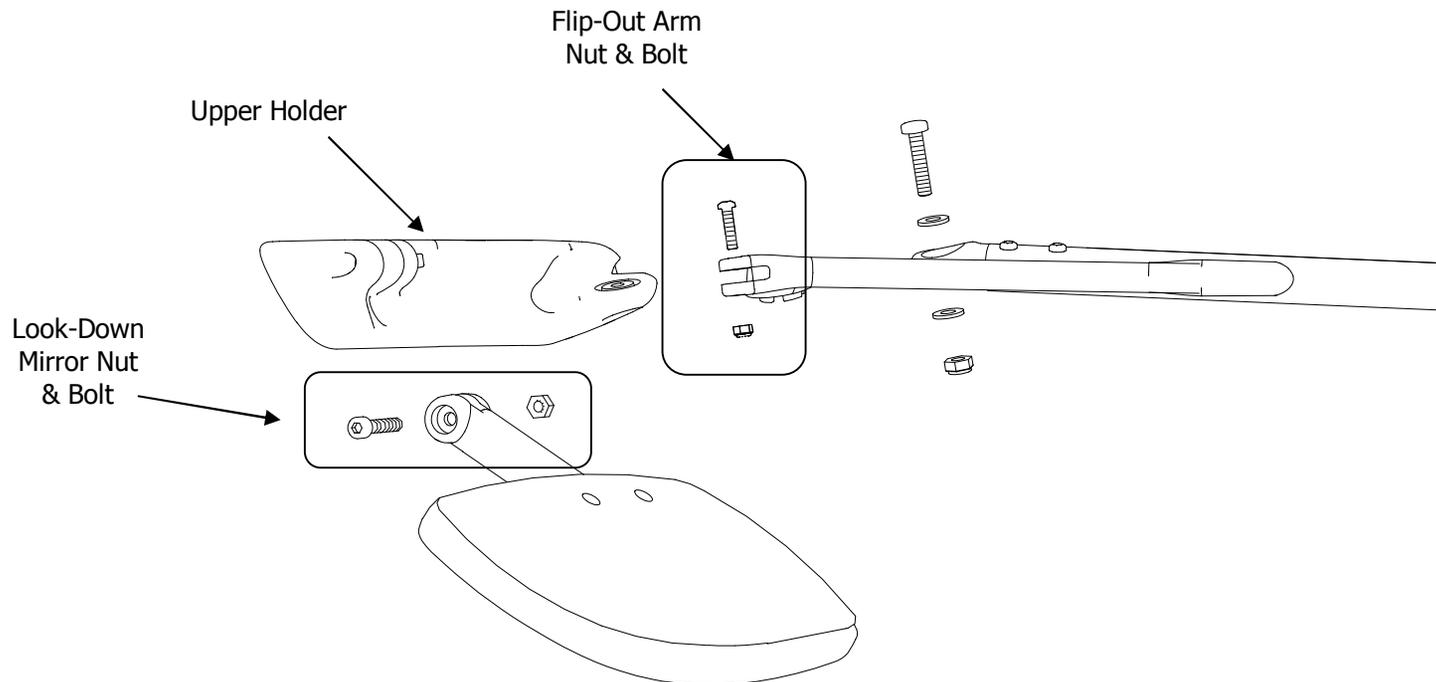


## (G.2.2) Removing or Adjusting Look-Down Mirror

To remove or adjust the look-down mirror, use a 6 mm allen driver and 13 mm socket at the look-down mirror nut and bolt. Nominal setting for the look-down mirror nut and bolt is 14 N-m (10 ft-lbs).

**Important! DO NOT use the flip-out arm as a handle to hold or carry the mirror!**

The flip-out arm is attached by a bolt with a 4 mm allen head, torqued to 3 N-m (2 ft-lbs).



## (G.3) Removing, Attaching, or Adjusting the Mirror Heads (From the Bracket)

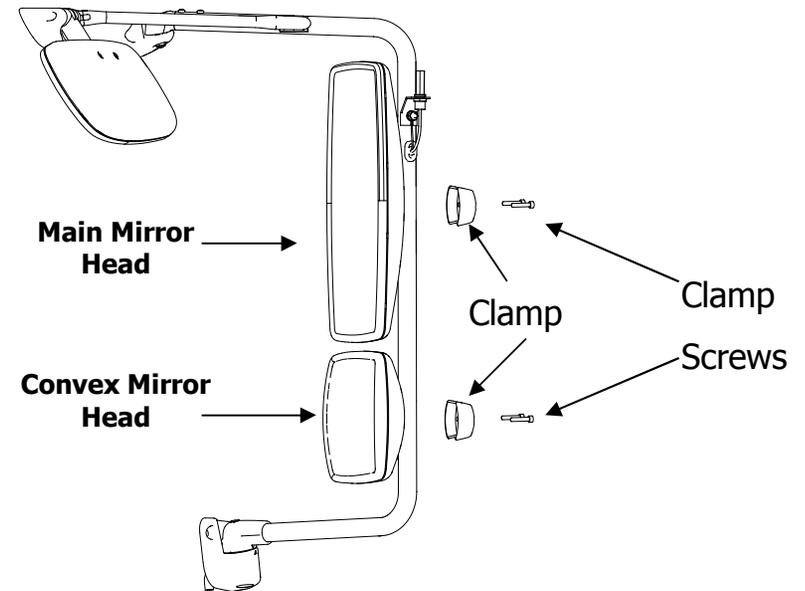
### To Adjust Mirror Head Angle (On the Tube)

1. Loosen the two clamp screws using a T-30 driver. To prevent the mirror from sliding down, hold it in place while removing the screws.
2. Adjust mirror head to desired position. Tighten clamp screws to 10 N-m.

**MAKE SURE THE OPTIMUM VIEWING ANGLE IS ASSURED FOR THE DRIVER OF THE VEHICLE AT ALL TIMES!**

### To Remove Mirror Head

Loosen the two clamp bolts using a T-30 driver. To prevent the mirror from sliding down, hold it in place from the bottom.



### To Attach Mirror Head

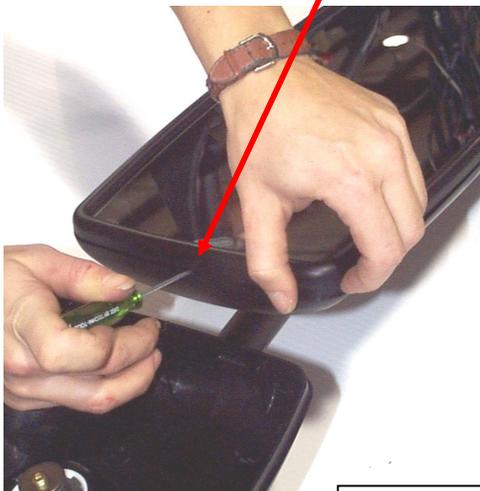
1. Place the mirror head on the bracket, and hand-tighten the bolts at the mounting clamp.
2. Adjust the mirror to the optimum position for the driver.
3. Tighten the two bolts at the mounting clamp to 10 N-m.

## (G.4.1) Mirror Plate Exchange - Removing Mirror Plate

Your Lang-Mekra mirror system is equipped with a durable mirror plate. The mirror glass is reinforced with anti-shatter adhesive to minimize splintering in the event of breakage. We strongly recommend the prompt replacement of damaged mirror plates.

If you have a heated mirror, be careful not to damage the wiring or the heater connections when changing the mirror plate, especially when detaching heater wires from the mirror plate.

Access slots for  
locking tabs



### To Remove the Mirror Plate

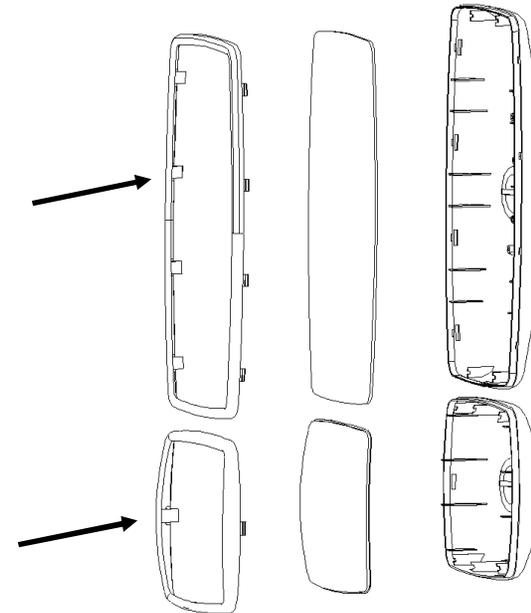
1. Use a small flat-head screwdriver to push in the locking tabs thru the access slots along the mirror housing. **Do not use the screwdriver to pry the mirror plate!**
2. Start pushing in the tabs near the corner of the mirror, then continue around the mirror while pulling lightly on the mirror bezel.
3. Pull the mirror bezel away from the housing. If the mirror is heated, detach the heater wires. **Do not cut the wires.**

Note: The procedure is the same for main, convex, and lookdown mirror plates.

## (G.4.2) Mirror Plate Exchange - Installing Mirror Plate

### To Install the Mirror Plate

1. Attach wire terminals to back of new mirror plate.
2. Place glass between mirror housing and bezel. Align locking clips on bezel with mirror housing. **Make sure all the clips are inside the housing.**
3. Press mirror plate into housing firmly, ensuring that all clips lock into place.



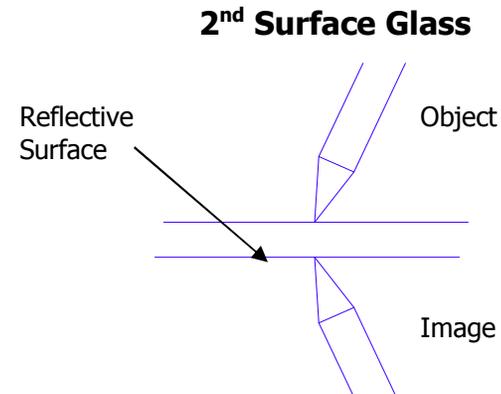
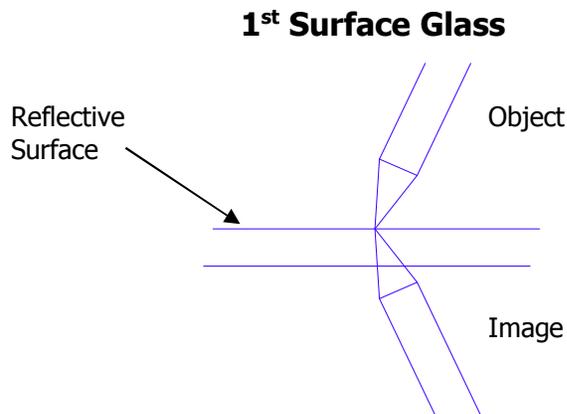
Note: The procedure is the same for main, convex, and lookdown mirror plates.

## (G.5) General Maintenance and Cleaning Tips

There are two main types of mirror glass: 1<sup>st</sup> surface and 2<sup>nd</sup> surface. Each type has different properties. 1<sup>st</sup> surface glass has an exposed reflective surface. 2<sup>nd</sup> surface glass has a shielded reflective surface. When cleaning 1<sup>st</sup> surface mirror glass, abrasive cleaners or brushes should be avoided. Excessive abrasion may damage the reflective surface. 2<sup>nd</sup> surface glass can be scratched, but the reflective surface will not be damaged.

A standard glass cleaner and a soft, clean cloth should be used to clean the mirror surface.

To verify whether you have 1<sup>st</sup> or 2<sup>nd</sup> surface glass, place an object such as a pen on the glass surface. Angle the pen to one side, so that you can see the tip. If there is a gap between the tip of the object and the tip of the image, your glass is 2<sup>nd</sup> surface. If there is no gap between the tip of the object and the tip of the image, your glass is 1<sup>st</sup> surface.





### **T.1.1 Bracket Does Not Fold Back, or is Difficult to Fold Back**

The mirror brackets are equipped with a fold-away feature, sometimes referred to as a break-away system. The mirrors will fold forward or backward manually, or upon impact. This feature minimizes damage to the mirror system and the door. The upper holder is designed to give the bracket stability. However, the upper fastener kit may sometimes require adjustment. See G.2 to service the upper fastener. If the break-away force is too high (difficult to fold back), you may loosen the nut in the lower holder. The entire system foldaway force should be between 190 & 320 N. When the detent is in the nominal position, the detent spring should be almost fully compressed.

### **T.1.2 Bracket Folds Back Too Easily**

If the bracket folds back too easily, check the following:

1. Upper fastener kit (**G.2**) should be torqued to 10 N-m (7.3 ft-lbs). If the upper fastener kit is too loose, tighten it to the specified torque.
2. Ensure the lower pivot is in the correct detent position. The arrow on the front (outer) surface of the holder should align with the arrow on the tube connector.

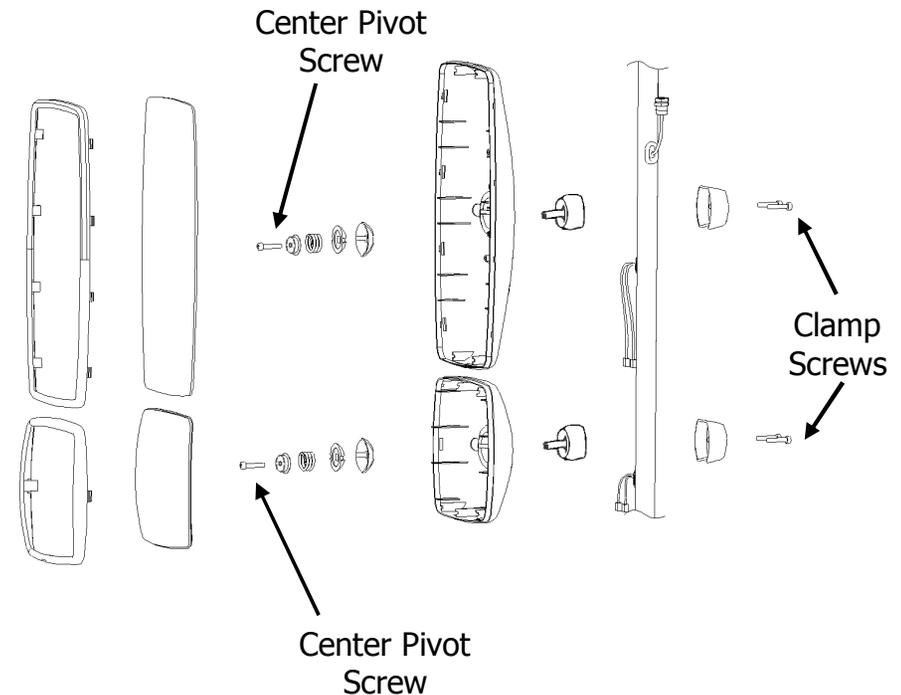


## T.2 Mirror Movement Analysis

Currently, International Standard Series mirrors are not offered with a remote control option. The mirrors are manually adjusted. If any difficulty is found when attempting to adjust the mirror, or if the mirror will not hold its position, check the following:

1. Remove the mirror plate according to **G.4.1**.
2. Ensure there are no obstructions or foreign objects blocking movement of the mirror head.
3. Ensure all components are present and in proper working order (see illustration).
4. Check the torque setting of the fasteners. The center pivot screw should be set at 9 N-m. The clamp screws should be torqued to 10 N-m, using a T-30 driver.

If you still encounter difficulties, contact the Lang-Mekra Technical Support center at 1-888-MEKRA-4-U.





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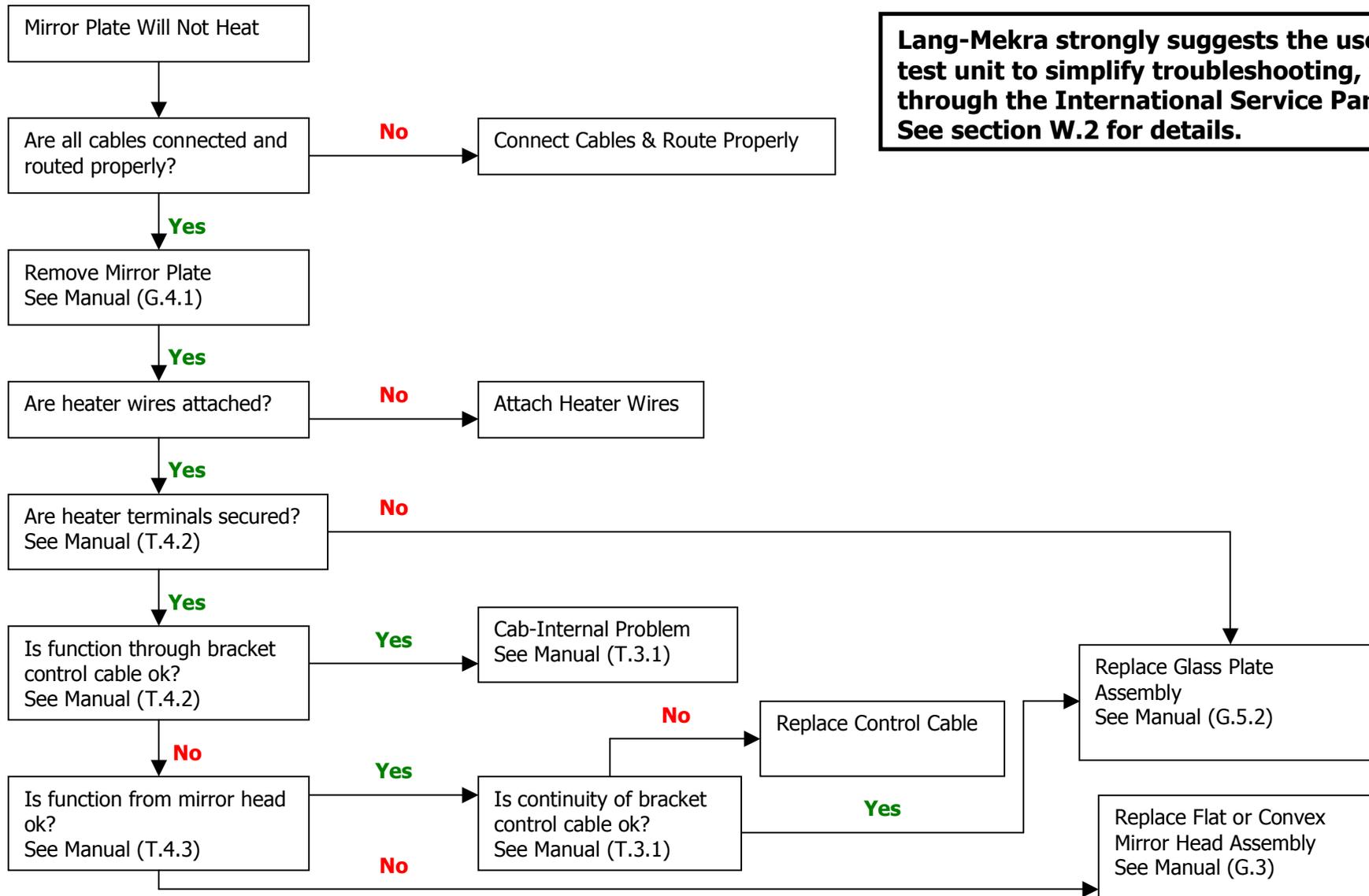
## (T.3.1) Wiring & Connections

<b>Mirror Head Internal Wiring</b>		
<b>Circuit Color</b>	<b>Function</b>	<b>Pin Out</b>
Red	Heater	1
Black	Common	2

<b>Control Cable Schematic</b>		
<b>Circuit Color</b>	<b>Function</b>	<b>Pin Out</b>
Black	Heater Ground	H
Red	Heater	D
Blue	CB Ground	G



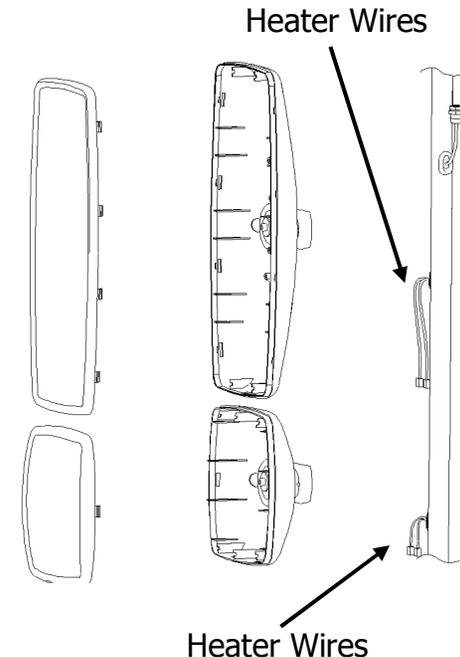
## (T.4.1) Mirror Heat Analysis Flowchart



**Lang-Mekra strongly suggests the use of a test unit to simplify troubleshooting, available through the International Service Parts group. See section W.2 for details.**

## (T.4.2) Mirror Heat Analysis

1. Follow the flowchart in **T.4.1** to diagnose mirror heat problems.
2. Remove the mirror glass according to **G.5.1**. Check to ensure the mirror is heated. (Heater terminals are present on the back of the glass.)
3. Make sure all cables and connections are tight.
4. Check to see if the heater terminals are secure. (See Illustration). If not, replace the glass plate assembly.
5. Using a tester unit, or supplying power to the bracket cable according to **T.3.1**, test the function of the heat by applying power to connector inside the cab. If the mirror functions properly, the fault is cab-internal. If the mirror does not function properly the problem is located within the mirror system. Check the connections, and if necessary replace the control cable as indicated in the flowchart. Always perform a continuity check (see **T.3.1**) on the control cable and confirm the fault before attempting to replace the control cable. If the control cable functions properly the mirror head assembly (flat or convex) must be replaced. See **G.3** for details.



## (T.5) Surface Finishes

For the black version, the paint on the bracket and other metal parts is a flexible, weather-resistant powder-coating. This coating requires no topcoat. If the paint is chipped or otherwise damaged, a matching wet paint may be used if the surface is properly prepared.



## **(W.1) Warranty Coverage**

Lang-Mekra provides a warranty for production parts covering materials and workmanship. Warranty reimbursement includes part replacement, repair time at accepted labor rates and reasonable administrative costs. The time period of the warranty coverage and specific terms are determined by International.

### **The warranty will cover:**

- ❑ Functional Quality of Components
- ❑ Lang-Mekra Workmanship
- ❑ Confirmed Field Failures
- ❑ Labor Costs for Replacement
- ❑ Reasonable Administrative Costs

### **The warranty will not cover:**

- ❑ Glass Breakage and Other Impact, Abuse, Mistreatment
- ❑ Minor Re-assembly
- ❑ Unnecessary and/or Improper Service
- ❑ Unauthorized Product Alterations and/or Additions
- ❑ Unreasonable Costs

**Please Do Not Submit Warranty Claims for Items That Have Suffered Impact!**

## **Parts Returned Exhibiting Impact Damage Will Be Denied Coverage, and May Be Returned Freight-Collect**

Lang-Mekra reserves the right to inspect submitted warranty claims. Upon satisfactory performance and history, dealers, fleets and other end users may be granted coverage based on description alone. Evaluation points will include:

- ❑ Complete and Accurate Claim Descriptions
- ❑ Use of Appropriate Replacement Parts
- ❑ Absence of Rejected Claims



## (W.2) Available Service Parts

All warranty replacements should utilize the appropriate service part or parts. **Unnecessary replacements are not covered by warranty.** The list below represents all parts currently available for service and after-market use relating to the International Standard Series mirror system. The reference number given corresponds to the illustrations following in W.3. Please note that the illustrations and parts information are periodically updated.

Be sure to check the after-market part listings available through International for the latest revisions to this list.

Item Number	Int'l Part #	LM Aftermarket Part #	Part Description
1	3580610C94	594052001-PDC	MIRROR SYS STD, LH, BLK, NO CONVEX
1	3561589C97	594052007-PDC	MIRROR SYS STD, LH,CB,BLK
1	3602836C93	594053011-PDC	MIRROR SYS STD, LH,HTD,BLK
1	3561587C96	594052003-PDC	MIRROR SYS STD,LH,BLK
1	3602838C93	594053015-PDC	MIRROR SYS STD,LH,HTD,CB,BLK
1	2588603C93	594052023-PDC	Mirror System, Standard, 96+Bracket, LH Manual, Heated, CB
2	3561590C97	594052008-PDC	MIRROR SYS STD, RH,CB,BLK
2	3602837C93	594053012-PDC	MIRROR SYS STD, RH,HTD,BLK
2	3561588C96	594052004-PDC	MIRROR SYS STD,RH,BLK
2	3561595C96	594052006-PDC	MIRROR SYS STD,RH,BLK, W/LKD
2	3561596C97	594052010-PDC	MIRROR SYS STD,RH,CB,BLK,W/LKD
2	3602840C93	594053014-PDC	MIRROR SYS STD,RH,HTD,BLK,W/LKD
2	3602839C93	594053016-PDC	MIRROR SYS STD,RH,HTD,CB,BLK
2	3602841C93	594053018-PDC	MIRROR SYS STD,RH,HTD,CB,BLK,W/LKD
2	2588604C93	594052024-PDC	Mirror System, Standard, 96+Bracket, RH Manual, Heated, CB
3	2589151C2	584005013-PDC	BRACKET ASSY ,BLK ,STD, HTD, CB, LH



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3	2506300C4	584004029-PDC	BRACKET ASSY, BLK,HTD,RMT,LTD,CB,PREMIUM,LH
3	2505276C4	584004005-PDC	BRACKET ASSY,BLK,STD, CB,LH
3	2589149C2	584005009-PDC	BRACKET ASSY,BLK,STD,HTD,LH
3	2505274C3	584004001-PDC	BRACKET ASSY,BLK,STD,LH
4	2589152C2	584005014-PDC	BRACKET ASSY, BLK, STD, HTD, CB, RH
4	2505277C4	584004006-PDC	BRACKET ASSY,BLK,STD, CB,RH
4	2589150C2	584005010-PDC	BRACKET ASSY,BLK,STD,HTD,RH
4	2505275C3	584004002-PDC	BRACKET ASSY,BLK,STD,RH
5	2589153C2	584005012-PDC	BRACKET ASSY, BLK, STD, HTD, RH, W/LKD
5	2505278C3	584004004-PDC	BRACKET ASSY, BLK, STD, RH, W/LKD
5	2505291C4	584004008-PDC	BRACKET ASSY,BLK,STD,CB,RH,W/LKD
5	2589154C2	584005016-PDC	BRACKET ASSY,BLK,STD,HTD,CB,RH,W/LKD
6	2589241C3	614051210-PDC	STD MIRR HEAD, MANUAL
6	2589243C3	614052220-PDC	STD MIRR HEAD,MANUAL,HTD
7	2589242C3	614061210-PDC	STD CONVEX MIRR HEAD,MANUAL
7	2589244C3	614062220-PDC	STD CONVEX MIRR HEAD,MANUAL,HTD
8	2505813C2	404055700-PDC	STD FLAT GLASS PLATE ASSY
8	2505814C2	404055800-PDC	STD FLAT GLASS PLATE ASSY, HTD
9	2505815C2	404065204-PDC	STD CONVEX GLASS PLATE ASSY
9	2505816C2	404065304-PDC	STD CONVEX GLASS PLATE ASSY, HTD
11	2585911C2	613600001N-PDC	Look Down Mirror Glass with Bezel
13	2506242C92	084002002-PDC	CB ANTENNA HOLDER ASSY
15	2507274C1	624059999-PDC	CLAMP KIT BLACK
15	2506235C91	204001611-PDC	FASTENER KIT
18	2509065C91	614000001-PDC	Upper Holder Kit, LH
18	2509068C91	614000004-PDC	Upper Holder Kit, LH No CB Ground
18	2509066C91	614000002-PDC	Upper Holder Kit, RH
18	2509069C91	614000005-PDC	Upper Holder Kit, RH No CB Ground
18	2509067C91	614000003-PDC	Upper Holder Kit, RH with Lookdown Attachment



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18	2509070C91	614000006-PDC	Upper Holder Kit, with Lookdown Attachment, No CB Ground
19	2507655C91	614003501-PDC	FLIP OUT ARM KIT LEFT
19	2507656C91	614003502-PDC	FLIP OUT ARM KIT RIGHT
20	2509146C91	614000007-PDC	Kit, Flipout Receiver, LH with Rivet
20	2509147C91	614000008-PDC	Kit, Flipout Receiver, RH with Rivet
21	2509980C1	144051000-PDC	Bezel, Flat Main, Black
22	2509979C1	144061100-PDC	Bezel, Black Spot Cvx R450
23	2590983C1	204004501-PDC	NGV Lower Holder Gasket, LH
23	2590984C1	204004500-PDC	NGV Lower Holder Gasket, RH
N/A	2506243C91	904000100-PDC	TESTER UNIT BOX

## (W.3) Illustrations

