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

E-Mail
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).

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

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

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\textsuperscript{st} surface and 2\textsuperscript{nd} surface. Each type has different properties. 1\textsuperscript{st} surface glass has an exposed reflective surface. 2\textsuperscript{nd} surface glass has a shielded reflective surface. When cleaning 1\textsuperscript{st} surface mirror glass, abrasive cleaners or brushes should be avoided. Excessive abrasion may damage the reflective surface. 2\textsuperscript{nd} 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\textsuperscript{st} or 2\textsuperscript{nd} 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\textsuperscript{nd} surface. If there is no gap between the tip of the object and the tip of the image, your glass is 1\textsuperscript{st} 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.
(T.3.1) Wiring & Connections

### Mirror Head Internal Wiring

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<thead>
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<th>Circuit Color</th>
<th>Function</th>
<th>Pin Out</th>
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<tr>
<td>Black</td>
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### Control Cable Schematic

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<td>Red</td>
<td>Heater</td>
<td>D</td>
</tr>
<tr>
<td>Blue</td>
<td>CB Ground</td>
<td>G</td>
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</tbody>
</table>
(T.4.1) Mirror Heat Analysis Flowchart

Mirror Plate Will Not Heat

Are all cables connected and routed properly?
  Yes → Remove Mirror Plate
  No → Connect Cables & Route Properly

Remove Mirror Plate
  See Manual (G.4.1)

Are heater wires attached?
  Yes
  No → Attach Heater Wires
  Yes

Are heater terminals secured?
  Yes
  No → Replace Glass Plate Assembly
  See Manual (G.5.2)

See Manual (T.3.1)

Is function through bracket control cable ok?
  Yes → Cab-Internal Problem
  No → Replace Control Cable

See Manual (T.3.1)

Is function from mirror head ok?
  Yes
  No → Replace Flat or Convex Mirror Head Assembly
  See Manual (G.3)

See Manual (T.4.3)

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.

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<th>Item Number</th>
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<th>LM Aftermarket Part #</th>
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If you have any questions, please contact Lang-Mekra Technical Support.
www.lang-mekra.com  Tel: 1-888-MEKRA-4-U  Email: quality@lang-mekra.com  Fax: (803) 337 5265

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Version: 4.0  For the most recent version of this manual, visit www.lang-mekra.com
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(W.3) Illustrations

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3, 4

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