



GENUINE PARTS

INSTALLATION INSTRUCTIONS

1. DESCRIPTION: Auto-Dimming Mirror with Compass and HomeLink®

2. APPLICATION: Titan

3. PART NUMBER: 999L1 WS100

4. KIT CONTENTS:

Item	Qty	Description	Service Part Number
A	1	Auto-Dimming Mirror with Compass and Homelink®	999L1 VZ000
B	1	Parts Kit	999L1 WS100S2
C	1	Harness Assembly	
D	1	Wire Cover	
E	6	Wire Tie	
F	6	Foam Tape	
G	1	Manual, Installation Instruction Download	999V2 AW000
H	1	User Guide	

5. PRE-INSTALLATION CAUTION / NOTES:



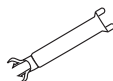
A



B



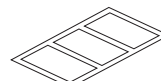
C



D



E



F



G



H

WARNING

- Disconnect vehicle battery before installing EC mirror to prevent possible shock injury during installation.

CAUTION

- Place removed vehicle trim components in a clean, dry area to prevent damage.
- This is a universal installation kit so all parts may not be used.
- For HomeLink Troubleshooting refer to page 13 or call 1-800-355-3515.

HOMELINK® AND THE HOMELINK HOUSE® ARE REGISTERED TRADEMARKS OF GENTEX CORPORATION.

Auto-Dimming Mirror Kit - Titan

6. TOOLS REQUIRED:

- | | | | |
|-----------------------|--------------------------|-----------------------|-------------------------|
| 1. Clean Rag | 3. T-20 Torx Head Driver | 5. Panel Removal Tool | 7. Phillips Screwdriver |
| 2. Needle Nose Pliers | 4. 3mm Flat Screwdriver | 6. 10mm Socket Wrench | |

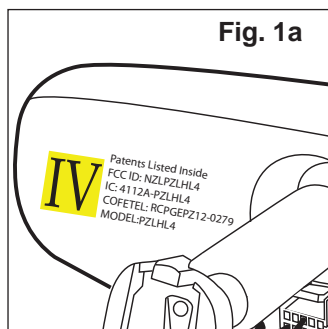
7. VEHICLE PREPARATION:

- 1) Apply parking brake.
- 2) Record the customer radio presets.

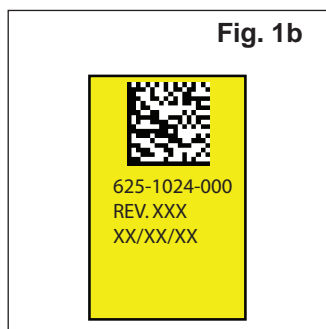
Presets	1	2	3	4	5	6	
A							
B							
C							

- 3) Make sure that the shift lever is engaged in the "P" position.
- 4) Turn the ignition switch OFF.
- 5) Open engine hood.
- 6) Disconnect negative battery terminal.
- 7) **For service parts only**, identify the generation of the mirror as either HomeLink 3 or HomeLink 4 by looking at laser marking on the back of the mirror. HomeLink 4 can be identified with a large "IV" as shown in (Fig. 1a) and by a yellow label on harness assembly (Fig. 1b). HomeLink 3 can be identified with a large "E11" with a circle as shown in (Fig. 2a). No harness label is present on HomeLink 3 harness assembly. **If replacing a HomeLink 3 mirror, the harness will also need to be replaced during installation.**

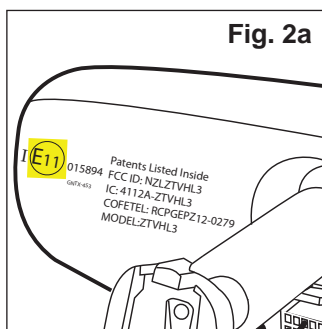
HomeLink 4 Mirror



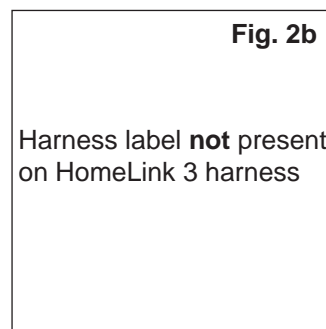
HomeLink 4 Harness Label



HomeLink 3 Mirror



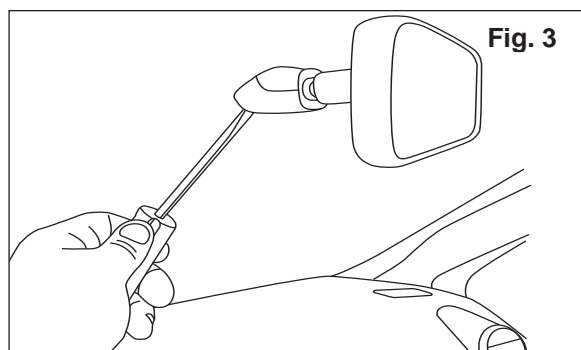
HomeLink 3 Harness Label



8. INSTALLATION PROCEDURE:

CAUTION

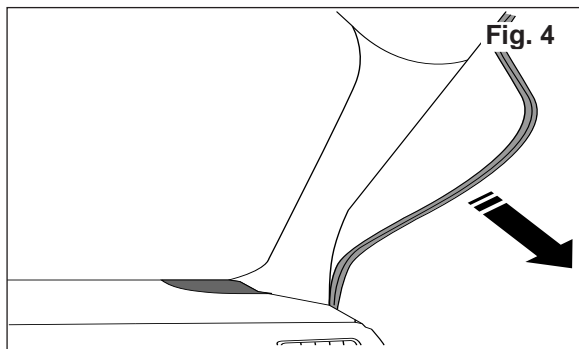
- Do not use excessive force when removing OE mirror from windshield. The window button may separate from windshield or the windshield could break.



1) Removal of OE rearview mirror.

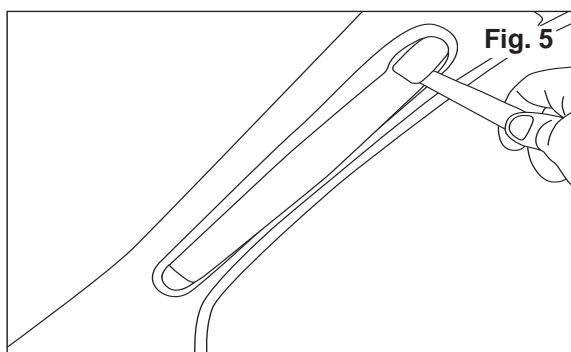
- Insert the flat end of a 3mm screwdriver into the opening at the bottom of the mirror mount. (Fig. 3)
- Push screwdriver up into the mount to disengage locking tab.
- While still applying upward pressure with the screwdriver, grasp the mirror bracket and lift the mirror up towards the headliner and off the mirror mounting bracket.

Auto-Dimming Mirror Kit - Titan

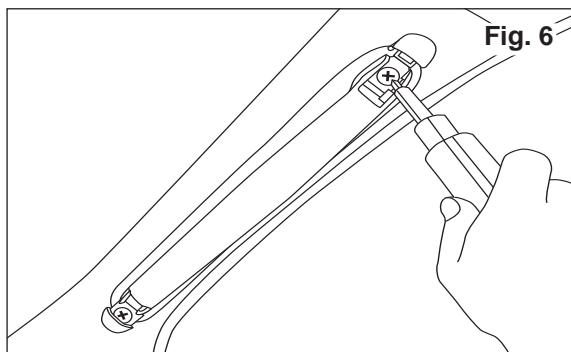


2) Vehicle Disassembly

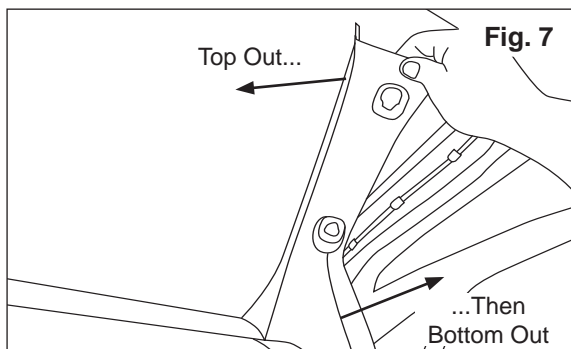
- a) Using panel removal tool, loosen passenger side weather strip and remove from top of A-pillar to scuff plate. **(Fig. 4)**



- 3) Using panel removal tool, carefully open covers on passenger side handle to expose 2 Philips screws. **(Fig. 5)**

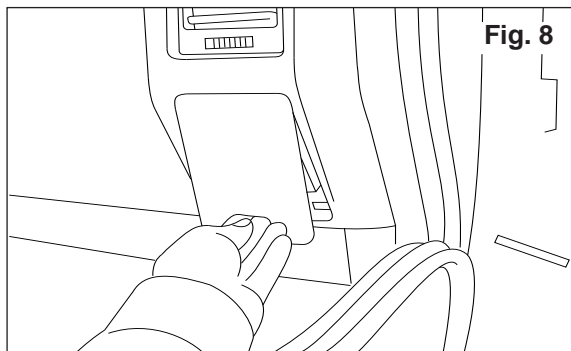


- 4) Using Philips screwdriver, remove 2 screws from passenger side grab handle and remove handle assembly. **(Fig. 6)**

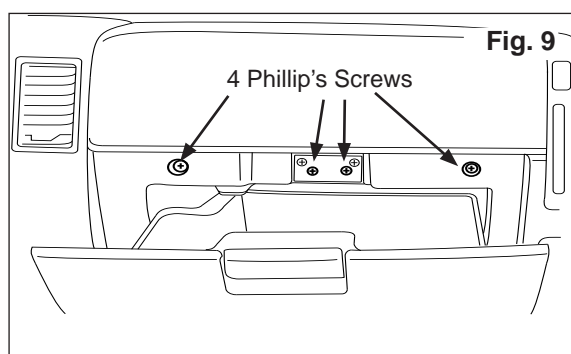


- 5) Remove A-pillar trim piece. **(Fig. 7)**

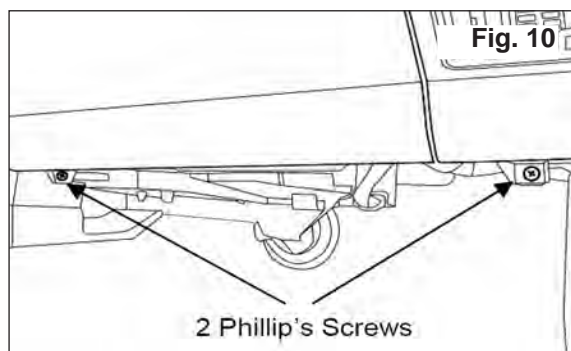
Auto-Dimming Mirror Kit - Titan



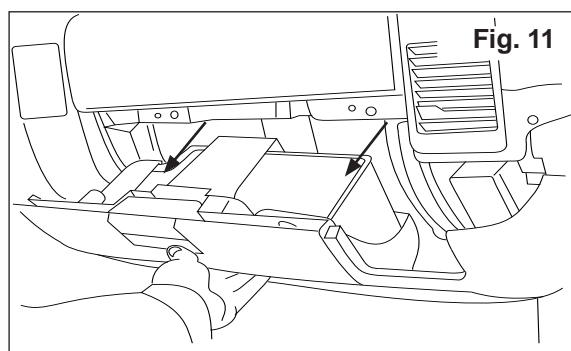
6) Remove fuse box cover. **(Fig. 8)**



7) Open glove-box and remove 4 Phillips screws. **(Fig. 9)**

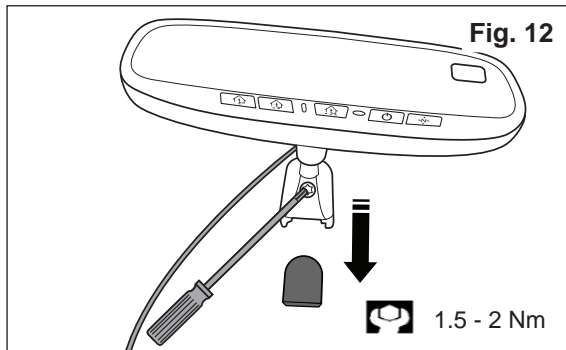


8) Remove 2 Phillip's screws from bottom of glovebox. **(Fig. 10)**



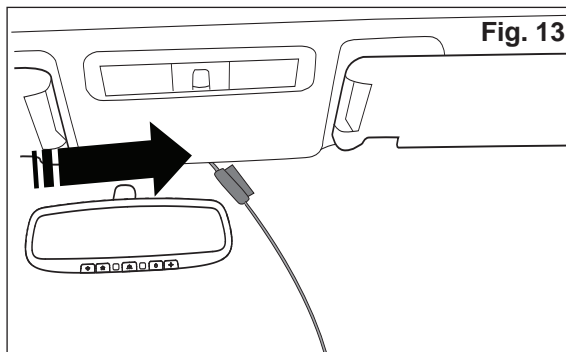
9) Remove glovebox assembly. **(Fig. 11)**

Auto-Dimming Mirror Kit - Titan

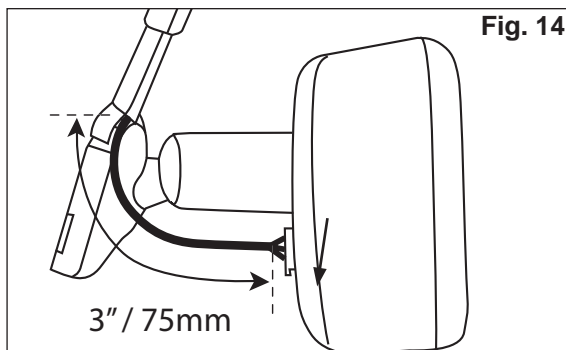


10) Install rearview mirror. **(Fig. 12)**

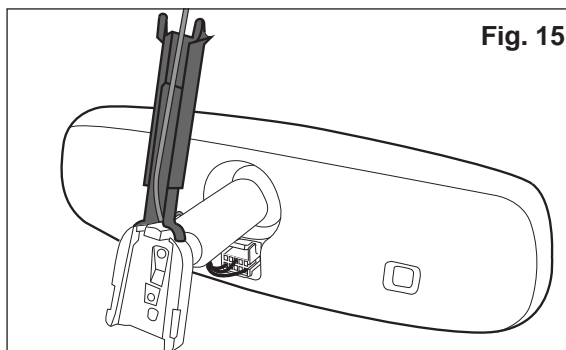
- Plug EC wire harness connector into the back of the EC mirror, pressing firmly until a “click” is heard. Pull GENTLY on the harness to confirm the harness is completely seated.
- Slide the rearview mirror base over the button on the windshield.
- Using a T-20 Torx head driver, tighten the screw on the mirror mount 1.5 - 2.0 Nm (1.3 ft - lbs.)



11) Wrap 1 piece of foam tape around the harness and, using a panel removal tool, tuck the harness between the headliner and roof above the EC mirror. **(Fig. 13)**



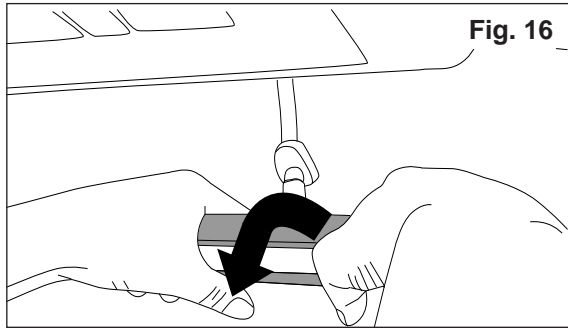
12) Verify that a approximately 3" (75mm) of wire are between the bottom of the wire cover and connector on the back of the mirror. Failure to allow the appropriate length will result in limited to no movement for the mirror. **(Fig. 14)**



13) If a wire cover was removed from the OE mirror, discard the OE wire cover and use the new wire cover from kit contents. **(Fig. 15)**

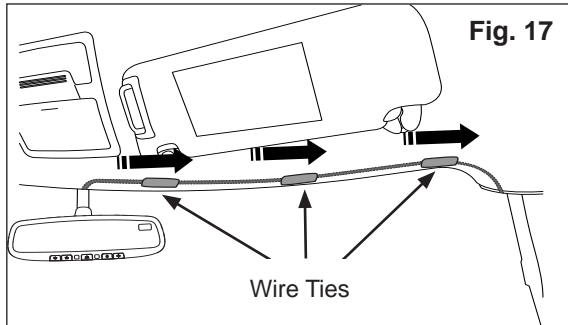
- Route harness into the groove of the wire cover and attach to the mirror mount.
- Slide the forks, on top of the wire cover, into the headliner.
- Verify cover is properly seated and aligned.

Auto-Dimming Mirror Kit - Titan



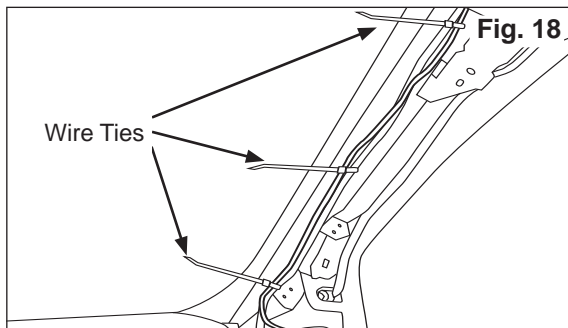
14) Grasp the mirror and rotate downward. Check to ensure wire cover sits flush against the windshield. **(Fig. 16)**

- a) If there is a gap between the wire cover and the windshield, ensure there is enough harness slack from the mirror to the headliner. Adjust if necessary.



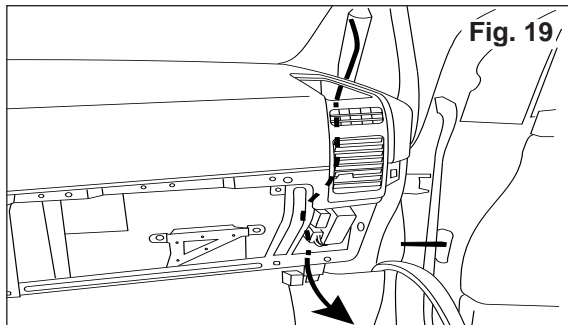
15) Wrap two additional pieces of foam tape around the mirror harness. Evenly space along the headliner as shown. **(Fig. 17)**

- b) Using a panel removal tool, tuck the wire harness between the headliner and the roof.

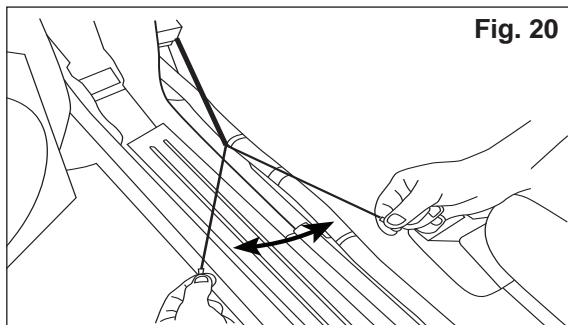


16) Route EC wire harness down the A-pillar, along OE harness. **(Fig. 18)**

- c) Loosly secure the EC wire harness with 3 small wire ties. **Do not tighten tie wraps.**

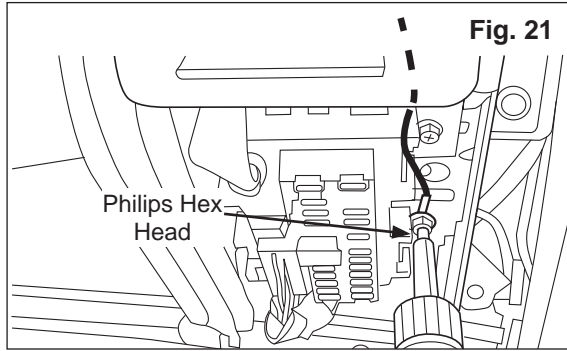


17) Route terminal ends of EC wire harness through, dash behind fuse block and through the fuse box panel opening. **(Fig. 19)**



18) Pull wires of EC wire harness apart, to allow connection of power wire into fuse block connector and attachment of ground ring to grounding point. **(Fig. 20)**

Auto-Dimming Mirror Kit - Titan

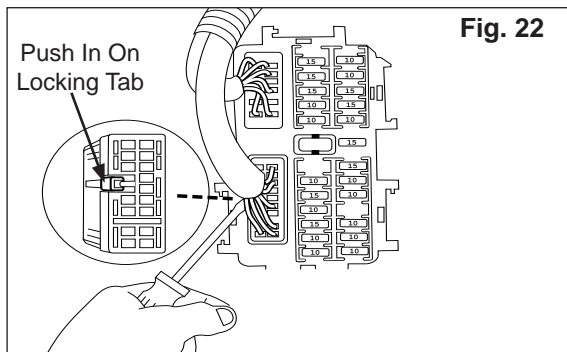


19) Remove lower Phillip's hex-head from right side of fuse block.

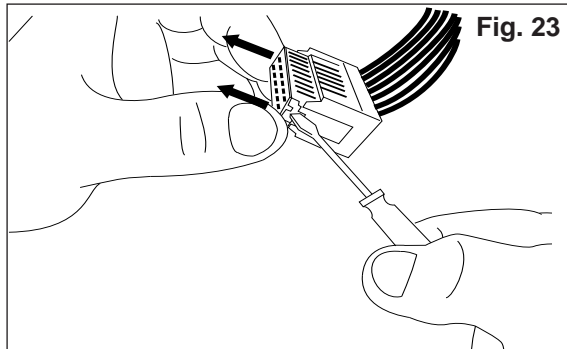
- a) Route EC wire harness ground ring over the top of the fuse block and attach to threaded end of hex-head screw. Re-install hex-head screw into support bracket. **(Fig. 21)**

⚠ CAUTION

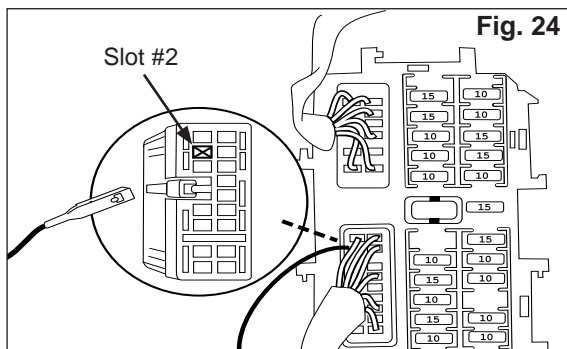
- Avoid pulling on 16-pin connector wires when removing 16-pin connector from fuse block.



20) Remove 16-pin connector from fuse block by pushing in on the locking tab located on the outside left of connector. Connector may need to be wiggled slightly while depressing locking tab. **(Fig. 22)**



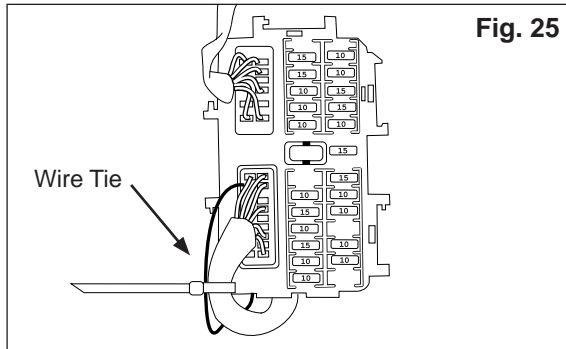
21) Unlock 16-pin connector to allow insertion of EC wire harness power terminal, by prying outward (as shown) on connector (both sides) with 3mm screw-driver. **(Fig. 23)**



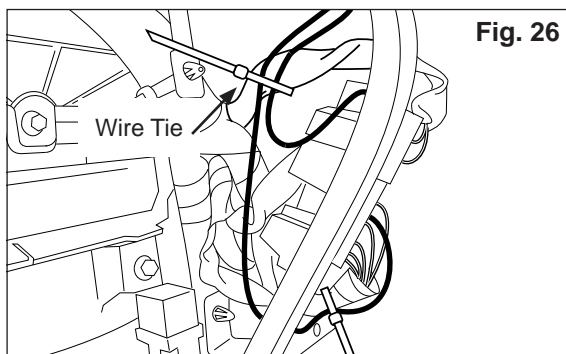
22) Insert EC wire harness power terminal into slot #2 opening and re-lock 16-pin connector by pushing back together. **(Fig. 24)**

- b) Re-install connector into fuse block.

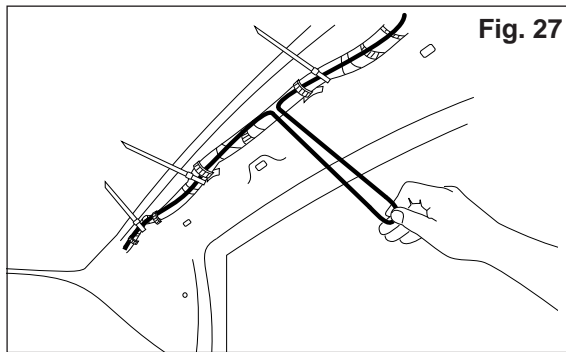
Auto-Dimming Mirror Kit - Titan



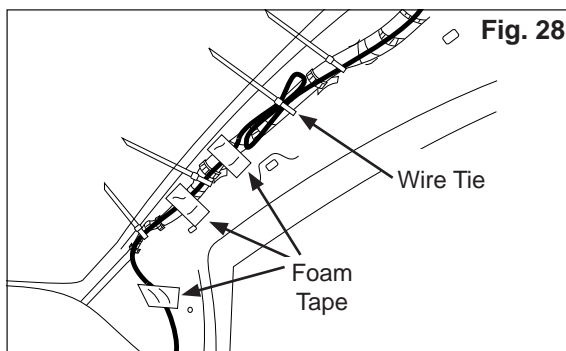
23) Secure EC power to 16-pin connector harness with 1 small wire tie. **(Fig. 25)**



24) Secure EC harness ground wire and power wire to large wire bundle behind the fuse block with one small wire tie. **(Fig. 26)**



25) Gather any excess EC mirror harness slack by pulling harness from A-pillar routing area. **(Fig. 27)**




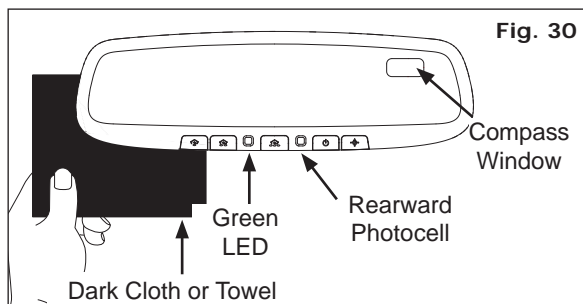
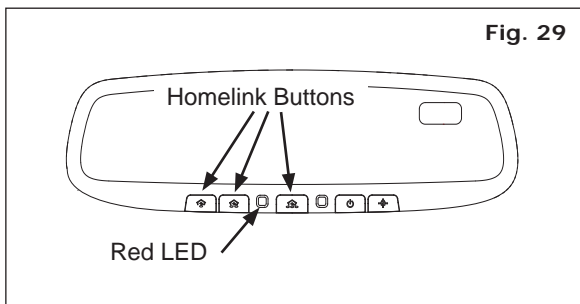
26) Bundle all excess wire from EC mirror harness and secure with one small wire tie at A-pillar routing area.
a) Secure EC mirror harness with 3 pieces of foam tape to ensure that harness does not rattle.
b) Tighten all wire ties and trim excess. **(Fig. 28)**


ACCESSORY CHECK:

Note: If errors are encountered during testing and compass calibration, see diagnostic flow charts, pages 11-13.




☐ Testing

- ☐ Tighten negative battery terminal nut to 5.4 Nm (47.8 in-lb).
- ☐ Turn the ignition switch to ON.
- ☐ Push each Homelink® button one at a time and verify that the LED indicator to the left of the center switch illuminates with a red LED (**Fig. 29**).
- ☐ Ensure vehicle is in well lit area.
- ☐ Check to see that the green LED is illuminated. If it is not, press the "  " button to turn it on.
- ☐ Cover the forward-looking photocell (located to the driver side of the wire harness connection on the back of the mirror) with a dark cloth or towel. After a few seconds, the mirror should begin to darken. Timing will vary with ambient light levels and a flashlight may be shined on the rearward photocell if needed, to accelerate effect. (**Fig. 30**)



- ☐ Remove the cover from the forward-looking photocell and the mirror will begin to clear.
- ☐ Push the "  " button to ensure compass display shows either a direction such as "NE" or a "C", and that it can be turned ON and OFF.
- ☐ Testing is now complete.

☐ Set Compass Zone

- ☐ With the display turned "ON", push the "  " button for 3 seconds, until a number appears in display (numbers correspond to regional compass zones).
- ☐ Press and release "  " button to scroll through zone numbers.
- ☐ Release "  " button when correct zone number is displayed (**Fig. 31**). Zone number will disappear and display will return to showing either a directional heading or a "C" after 5 seconds of no switch activity.



☐ Calibrate Compass

- ☐ Drive vehicle in circles (360°) at 5 mph or less until compass display window shows a direction.

☐ Check all **Critical Installation Steps**.

- ☐ Check all torque values
- ☐ Auto-Dimming mirror, pg. 5, step 10, fig. 12

ACCESSORY CHECK:

- ☐ Verify all wiring is secure and not exposed.
- ☐ Trim all excess cable ties flush.
- ☐ Check all vehicle electrical systems that the accessory interfaces with.
 - ☐ Power mirror switch.
 - ☐ Traction control switch.
 - ☐ Hood Release
 - ☐ Fuel Door Release

RE-INSTALLATION OF REMOVED PARTS:

CAUTION

Use caution when re-installing interior components to avoid damage, scratches, or breaking of mounting clips. Refer to the vehicle service manual for more information.

- ☐ Passenger side vehicle assembly.
 - ☐ Insert two philips screws in passenger side grab handle and fasten A-pillar.
 - ☐ Insert fuse box cover.
 - ☐ Insert 6 philips screws into glove box, 4 screws on top, 2 on the bottom.
 - ☐ Push garnish toward vehicle body to attach.

FINAL INSPECTION:

- ☐ Verify re-installed trim parts for proper flush fit (no gap, no waviness, etc).
- ☐ Verify all clips are fully engaged and locked.
- ☐ Verify re-installed trim parts are free from cracks, scratches, or stress cracks.
- ☐ Verify vehicle headliner, seat, steering wheel, center console, floor carpets, etc. are not soiled.
- ☐ Verify interior and exterior is not damaged.
- ☐ Turn ignition switch to "ON" and confirm proper operation of Vehicle Systems.
 - ☐ If equipped, verify all window and sunroof one touch operation and perform the reset procedure if necessary. Refer to the vehicle service manual for more details.
 - ☐ Confirm proper audio function (AM, FM, SAT, CD and AUX).
- ☐ Re-program radio presets and other vehicle settings to the recorded settings.
- ☐ Start engine and verify that there are no new Diagnostic Trouble Codes. Turn ignition switch to "OFF".
- ☐ Place the Owner Manual, Quick Reference Guide, and/or other Manual in the glove box.

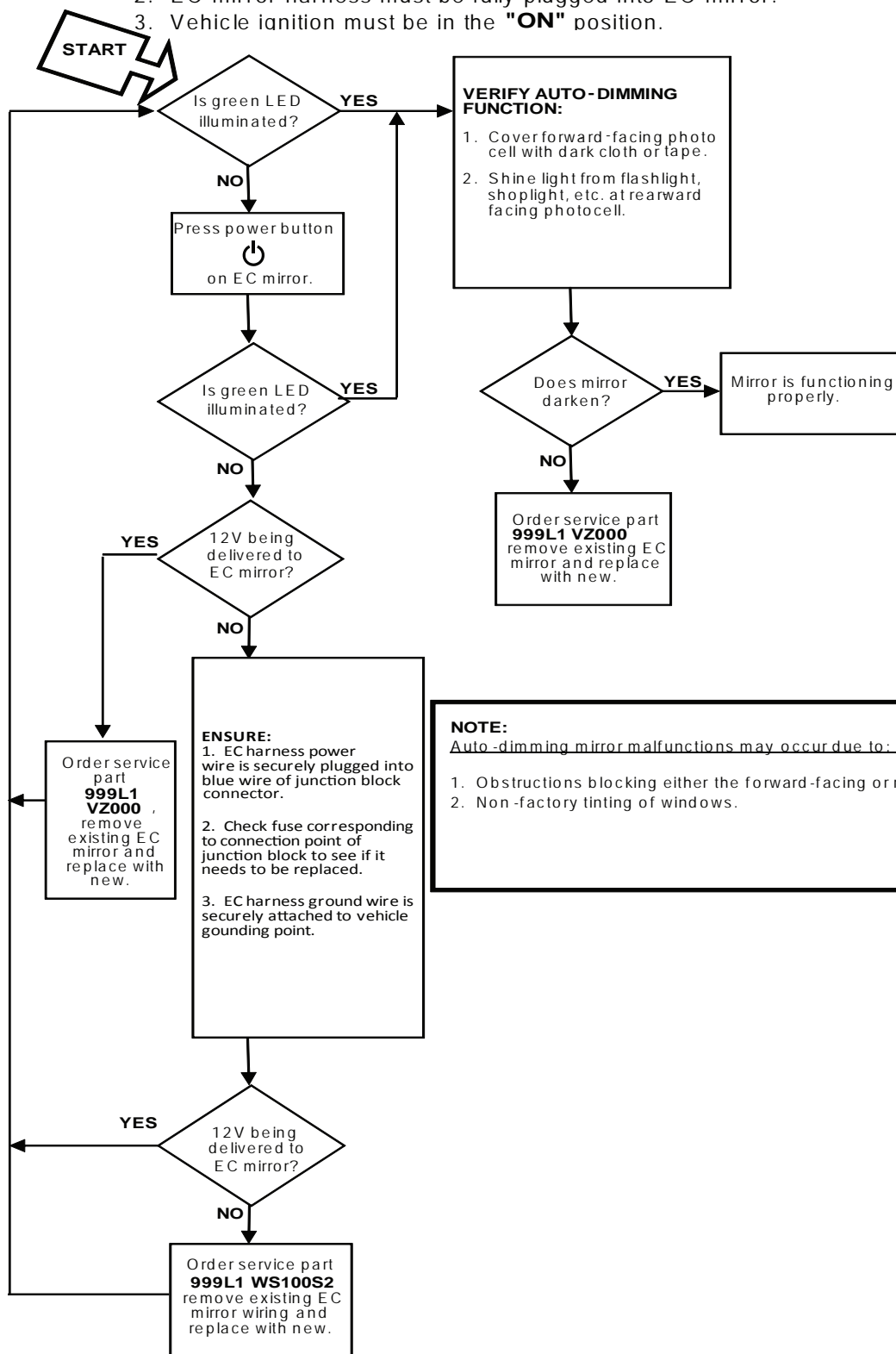
DIAGNOSTIC FLOW CHART:



Note: If working on service see Page 2, Step 7 to determine if the service mirror is HomeLink 3. Replacing a HomeLink 3 mirror will also require installing a new harness with service kit 999L1-WS100S2.

Before attempting to trouble-shoot EC mirror Auto-Dimming function, ensure the following:

1. Mirror is manufactured by **Gentex Corporation** (the letters **GNTX** will be etched onto the back of the mirror and the compass display window will be in the mirror glass).
2. EC mirror harness must be fully plugged into EC mirror.
3. Vehicle ignition must be in the **"ON"** position.



NOTE:

Auto-dimming mirror malfunctions may occur due to:

1. Obstructions blocking either the forward-facing or rearward-facing photo-cells.
2. Non-factory tinting of windows.

DIAGNOSTIC FLOW CHART: COMPASS TROUBLE-SHOOTING GUIDE

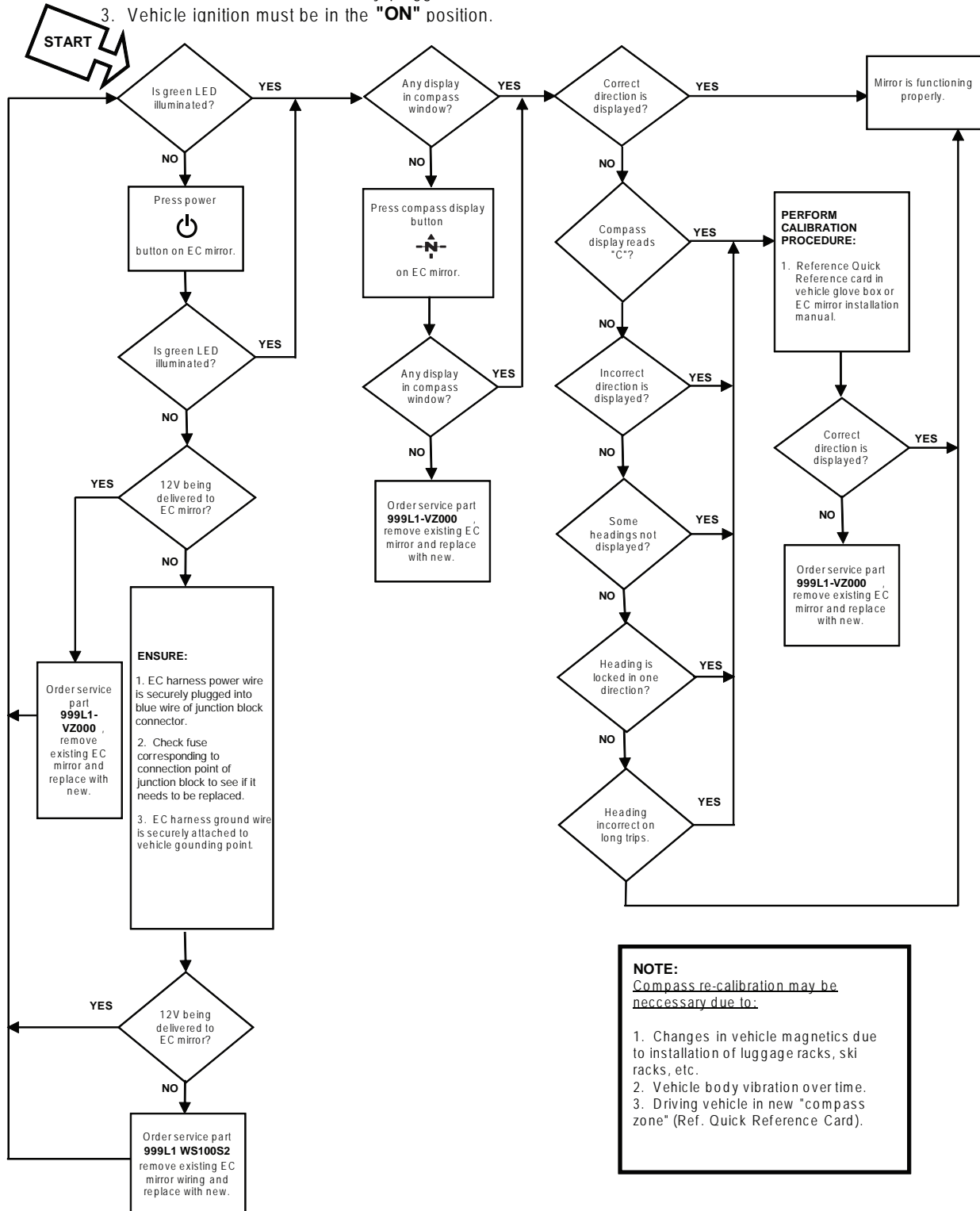
Part Number: 999L1 VZ000



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DIAGNOSTIC FLOW CHART: HOMELINK® TROUBLE-SHOOTING GUIDE

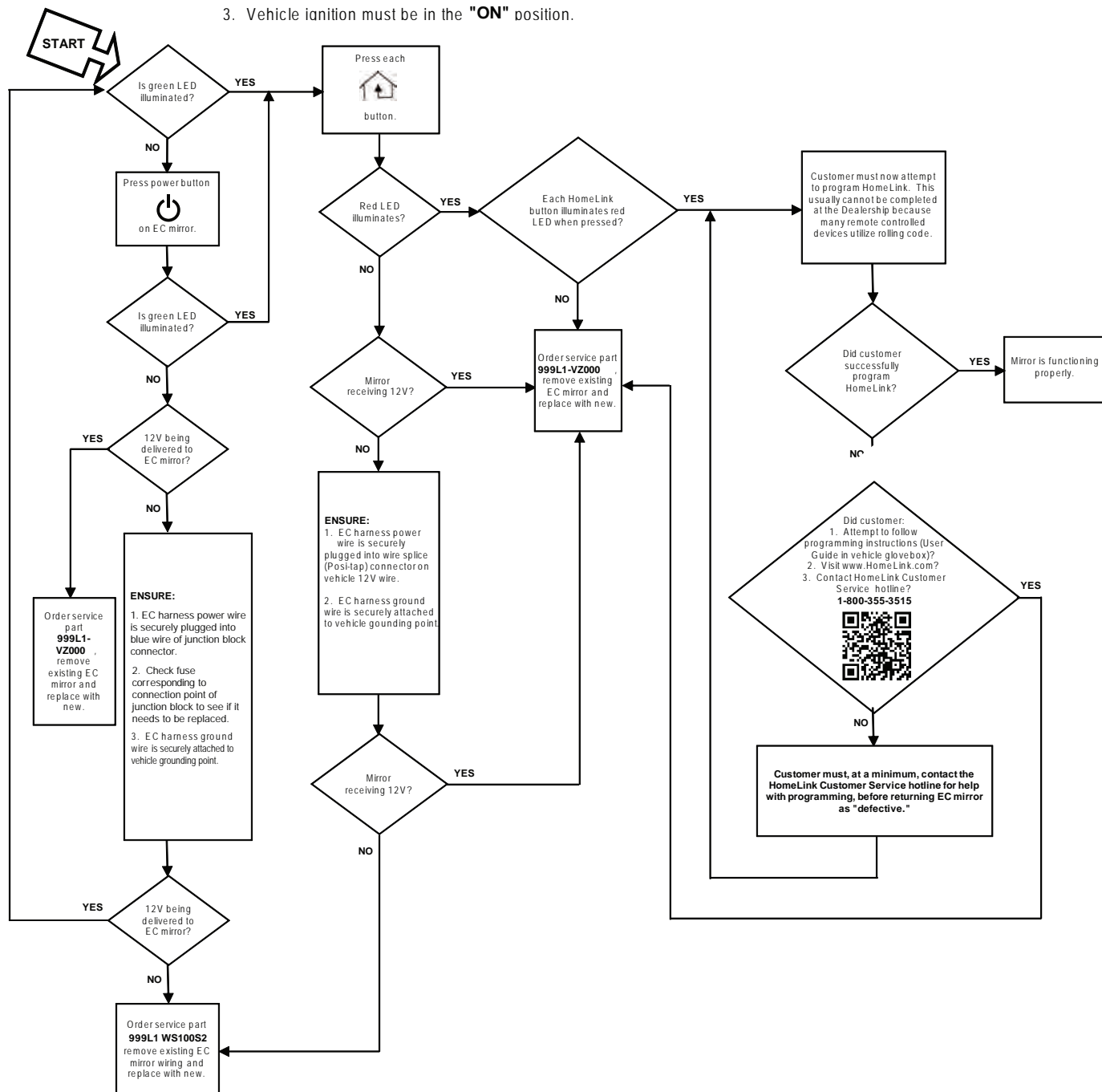
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