

**GENTEX**  
**Auto Dimming Rearview Mirrors**  
by MITO CORPORATION

Instructions for Universal Harness

These instructions have been prepared to provide you with details necessary for complete installation for all aftermarket Gentex mirrors sold by MITO Corp. Be sure to read all instructions prior to beginning the installation. Follow all the safety guidelines outlined in this instruction book as well as those set forth by industry and government. Please direct all operational or troubleshooting questions to our MITO Customer Service Department toll-free at 1-800-433-6486.

This Gentex Rearview Mirror Universal Harness is designed for use in applications where a custom harness is not available for your vehicle.

**IT IS IMPORTANT THAT YOU OBTAIN THE CORRECT INFORMATION FOR YOUR VEHICLE OR DAMAGE TO THE WIRING SYSTEM COULD OCCUR.**

**PARTS NEEDED**

One (1) Mirror Head  
One (1) Mirror Jumper Harness  
One (1) Universal Power Harness  
One (1) Mirror User Guide  
One (1) Temp Probe Harness (Only with comp/temp mirrors)  
One (1) Temp Sensor (Only with comp/temp mirrors)

---

**Tools Required for Installation**

Safety Glasses	Flashlight	Power Drill	1/4" Drill Bit	Knife
DC Voltmeter	Crimping Pliers	#20 Torx Bit	Phillips Screwdriver	
Wire Strippers				

---

**HomeLink®** is a registered trademarks of Johnson Controls, INC.

# GENTEX

## Auto Dimming Rearview Mirrors

### 1.0 PREPARATION

- 1.1 Inspect mirror for damage
- 1.2 Check Parts List for accuracy.

### 2.0 PREPARATION FOR ROUTING THE HARNESS (Inside the Driver's Side Area)

- 2.1 Remove the "A" pillar (windshield post) trim molding, upper windshield trim molding (if applicable), and kick panel trim.

#### INSTALLATION PRECAUTIONS / NOTES:

- Do not use excessive force when removing OE mirror from windshield. The windshield button may separate from the windshield or the windshield may break.
- Do not use excessive force if removal of OE mirror button is necessary.
- Do not route wiring over sharp metal edges or allow to be pinched behind trim to avoid causing an electrical short or break in the wire.
- Manufacturer/distributor not responsible for installation-related damage to vehicle.
- Contact original purchase source if additional information is desired regarding these products.
- For installation situations that installer is not familiar with, a qualified installation technician or mechanic should be consulted for assistance.
- Use wire ties to hold wires away from hot engine and critical parts such as brake and steering systems.
- If the green temp wires become cut for any reason, they must be soldered back together, not wire spliced.
- Contact your local auto dealership or auto sound center to obtain detailed information pertaining to your specific automobile wire color information.

### 3.0 REMOVE ORIGINAL EQUIPMENT (OE) REARVIEW MIRROR

**CAUTION:** DO NOT USE EXCESSIVE FORCE WHEN REMOVING MIRROR FROM WINDSHIELD. THE WINDSHIELD BUTTON MAY SEPARATE FROM THE WINDSHIELD OR THE WINDSHIELD MAY BREAK.

- 3.1 Screw mount mirror removal procedure: Note that there are several versions of mirror mount systems. If unfamiliar with mirror removal, seek professional assistance.

- Using a Philips screwdriver or #20 torx bit, loosen the screw in the base of the mirror.
- After loosening screw, gently lift upward to slide mirror off of mirror mount.



## GENTEX Auto Dimming Rearview Mirrors

### 3.2 Wedge mount mirror removal procedure: (Common for screw less mount).

- Using a small 1/8" (4 mm) flat-blade screwdriver, insert the flat end into the opening at the bottom of the mirror mount at the windshield.
- Slide the screwdriver into the center of the mirror mount until resistance is felt.
- Gently apply a small amount of additional upward force to lift away locking spring in the mount.
- While still applying upward pressure with the screwdriver, grasp the mirror bracket and wiggle side to side. Lift mirror up toward the headliner and off the windshield mount button.

### 3.3 Camlock Mirror Removal procedure: (Common Method)

- Grasp the base of the mirror.
- Rotate 90 degrees left or right.
- Slide mirror downward toward dash to remove.

## 4.0 INSTALL NEW GENTEX INTERIOR MIRROR

### 4.1 Wedge Mount Mirror Installation:

- Slide the mirror bracket down over the mirror mount on the windshield.
- Rock mirror side to side to aid installation until mirror fits tightly onto mirror mount.
- Use #20 Torx bit to tighten mirror mount set screw.

**NOTE REGARDING FACTORY MIRROR MOUNTS:** *If the Gentex Mirror does not fit the factory mirror mount on the windshield, a mirror mount adaptor may be available. In rare cases, it is possible the factory mirror mount will need to be replaced with one that is compatible with Gentex mirrors. The addition of a new wedge mount is recommended rather than attempting to remove the factory mirror mount from the windshield.*

*Attempting to remove a factory mirror mount from the windshield may result in damage to the windshield. If you need information concerning one of our Gentex adapter plates or a replacement mirror mount kit, please contact your Gentex mirror retailer.*

## GENTEX Auto Dimming Rearview Mirrors

### 5.0 ROUTING THE TEMPERATURE HARNESS (GREEN WIRES) ONLY ON MIRRORS WITH TEMPERATURE FEATURE

- 5.1 Open the hood of the vehicle.
  - 5.2 Locate a grommet in the firewall near the driver's side interior harness location and remove it.
- NOTE:** *If a grommet is not available, drill a 1/4" hole in a safe and convenient place. Take care not to damage objects in the passenger compartment when drilling.*
- 5.3 Locate the temperature probe harness (green wires) and pass the end with the 2 small terminals through the firewall to the inside of the passenger compartment.
  - 5.4 Route the rest of the temperature harness towards the front of the vehicle, over the fender well, and to an area in front of the radiator.

**NOTE:** *The preferred location for the temperature probe is in the center of the grille or someplace where it will be in free air in front, or to the side, of the radiator. Down near the bumper may also be used. Avoid locating it inside or in front of the wheel well, engine compartment, or too close to the headlamps. Try to locate the probe no higher than the center of radiator, and no lower than 8" above the pavement. Always try to keep the temperature probe in the center of the vehicle; never locate it outside of the frame rails.*

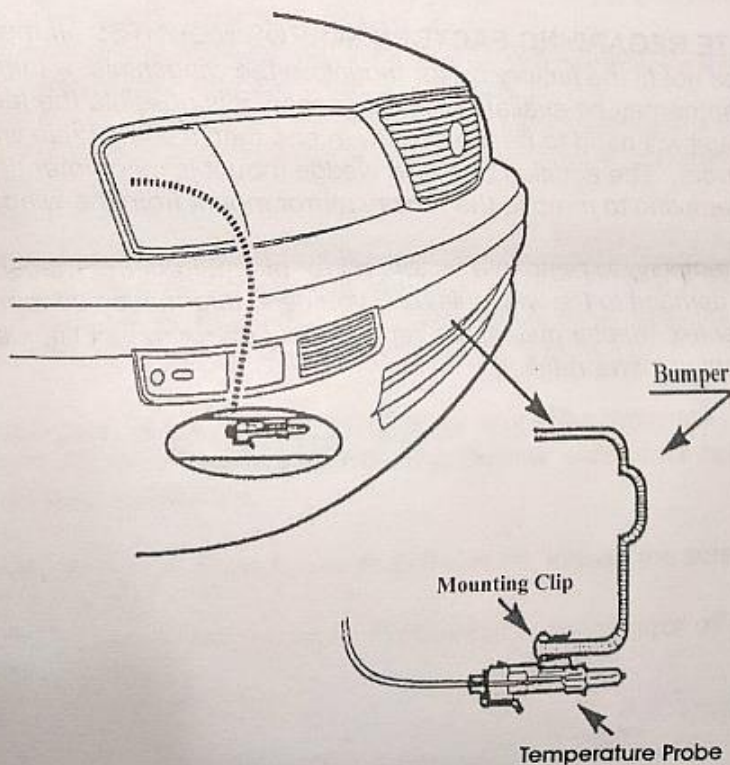


Fig. 5.5



## GENTEX Auto Dimming Rearview Mirrors

- 5.5 Mount the temperature sensor probe. See figure 5.5
- 5.6 Plug the probe on the connector making sure that the gray moisture seal seats inside the probe collar.
- 5.7 Clip on the temperature sensor probe. Do not install the probe pointing toward the rear of the car or pointing down, as water may get past the connector seals. Pull the excess temperature sensor harness back into the engine compartment.
- 5.8 Use wire ties to secure the temperature sensor harness.

**NOTE:** *Take care to route away from the accelerator and brake area so that the harness does not in any way interfere with their operation.*

- 5.9 Find the grommet that was removed in order to feed the temperature sensor harness through the firewall. Using a knife, carefully cut a slit in the grommet and slide the wires into the grommet. Reinstall the grommet back to its original position in the firewall.

### 6.0 ROUTING OF THE GENTEX UNIVERSAL POWER HARNESS

*Locate the universal power harness.*

- 6.1 Holding the white connector of the universal power harness, insert the 2 green temperature wire terminals into positions 4 and 5 of the white 5 pin connector as shown below. There is no polarity on the green wires, so it does not matter which green wire is inserted into either position. Make sure that you insert the terminals deep enough to lock in place.

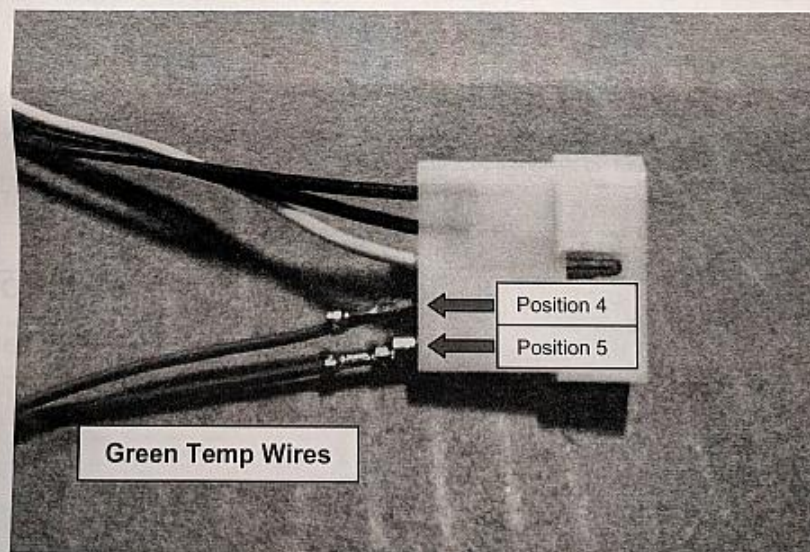


Fig. 6.1



## GENTEX Auto Dimming Rearview Mirrors

- 6.2 From the bottom of the driver's side dash, near the post location, feed the flat connector up along the side of the dash to the opening at the "A" pillar near the base of the windshield.
- 6.3 Pull the harness up far enough to reach the mirror location.
- 6.4 Gently pull down the front edge of the headliner and tuck the harness up under the edge of the headliner.
- 6.5 Continue tucking the harness under the headliner along the top of the windshield working your way over to the driver's side "A" pillar. Dress the wire harness along the "A" pillar and down to the dash opening.

**NOTE:** It will probably be necessary to tape these wires in place, or wire tie them to the existing factory harness.

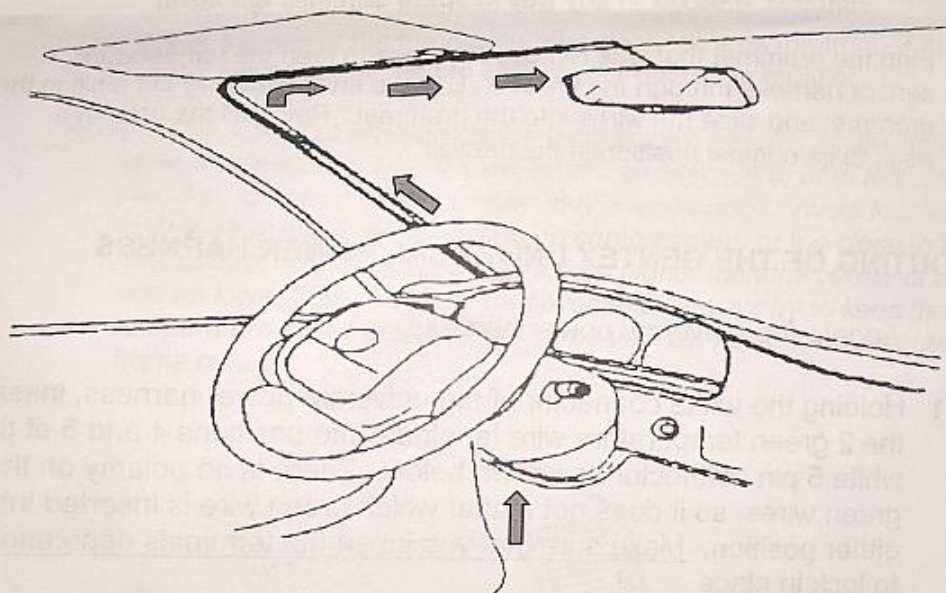
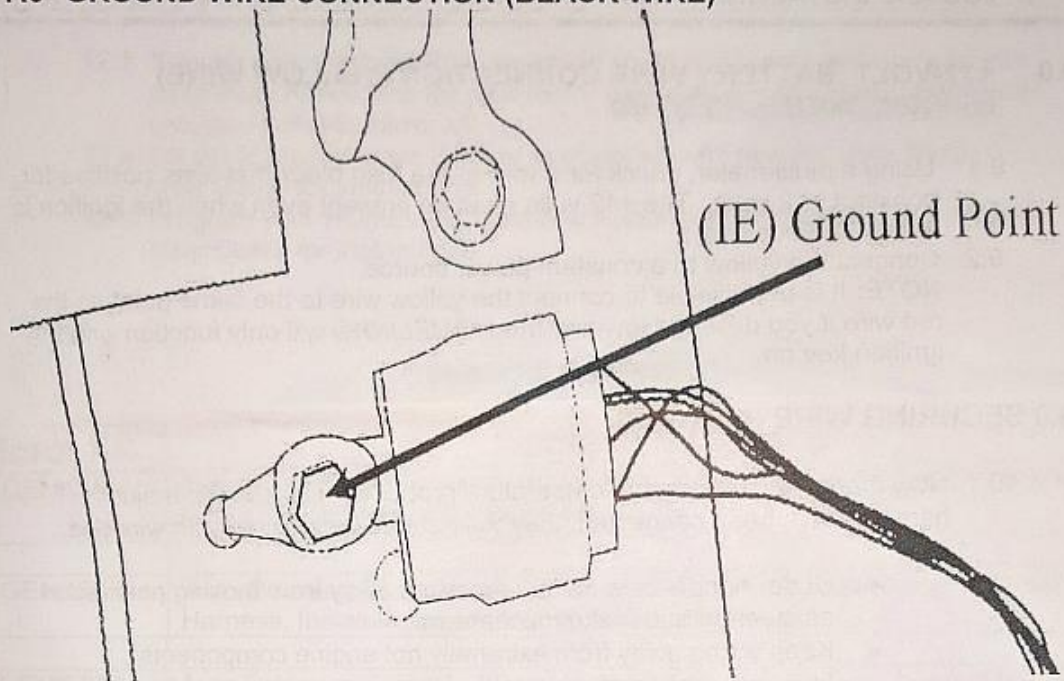


Fig. 6.4

<u>Wire Color</u>	<u>Connection</u>
Red	+12V ignition power (switched by ignition key)
Black	Ground
Yellow	+12V constant power (mirrors with HOMELINK®)
Green	Temp. probe wires (mirrors with temperature)

## GENTEX Auto Dimming Rearview Mirrors

### 7.0 GROUND WIRE CONNECTION (BLACK WIRE)



- 7.1 Locate an existing bolt or screw that is in contact with the vehicles metal body in the area of the driver's step well.
- 7.2 Route the mirror ground wire (black) to the ground point.
- 7.3 Remove the bolt or screw from the ground point and install the ring terminal over the ground bolt/screw. Scrape off paint from mounting surface, if necessary, to obtain a solid connection.
- 7.4 Reinstall and tighten the bolt or screw.

### 8.0 +12-VOLT IGNITION WIRE CONNECTION (RED WIRE)

- 8.1 Using a multi-meter, find a wire exiting fuse block that tests 12 volt positive and is controlled by the ignition switch. Make sure this 12 volt source remains as you turn on each accessory on the vehicle. Some vehicles circuits will show +12 volts until a certain accessory is turned on, then the +12 volts will go to 0 volts. This power source must turn off only when the vehicles ignition is in the OFF position.  
**NOTE:** *If mirror remains on at all times, it will drain the car's battery.*
- 8.2 Route the red wire (12-volt ignition) to an ignition controlled wire.
- 8.3 Use a butt connector, scotch lock, or t-tap to connect the red ignition wire at this time.



## GENTEX Auto Dimming Rearview Mirrors

IF YOU ARE INSTALLING A NON HOMELINK® MIRROR - SKIP TO STEP 10.0

### 9.0 +12-VOLT BATTERY WIRE CONNECTION (YELLOW WIRE)

#### MIRRORS WITH HOMELINK®

- 9.1 Using a multi-meter, check for a wire at the fuse block that tests positive for constant +12 volts. The +12 volts must be present even when the ignition is in the OFF position.
- 9.2 Connect the yellow to a constant power source.  
**NOTE:** It is permissible to connect the yellow wire to the same point as the red wire if you desire. However the *HOMELINK®* will only function with the ignition key on.

### 10.0 SECURING WIRE HARNESS

- 10.1 Now that all wires from the temperature probe harness and the main harness have been connected, they will need to be secured with wire ties.
- Under hood – be sure to keep wires away from moving parts such as steering and brake mechanisms.
  - Keep wiring away from extremely hot engine components.
  - Interior – wire tie all wires out of the way, making sure to avoid steering and brake components.

### 11.0 TESTING

- 11.1 Plug jumper harness in to the Gentex mirror head.
- 11.2 Turn the ignition switch to ON.
- 11.3 With the vehicle in a fairly well lit area, perform the following:
- Make sure the auto-dimming feature of the mirror is active. Auto-dimming is enabled when green LED is on. Refer to the instructions on the hangtag if auto-dimming needs to be enabled.
  - Cover the forward-looking photocell located on the back side of the mirror with your finger or a piece of black tape. Now shine a flashlight on the photocell next to the green LED.
  - After a few seconds, the mirror will begin to darken (time may vary with ambient light levels).
  - Remove finger or tape from the forward photocell and turn off the flashlight. The mirror will begin to un-dim.
  - If you installed a mirror with compass and temperature, make sure the display is illuminated.
  - Confirm the mirror is displaying an accurate temperature reading.
  - If you installed a mirror with map lights, make sure the map lights can be turn on and off properly.
  - Mirrors with *HOMELINK®*, the Green LED will turn Red or Amber when a *HOMELINK®* button is pressed.
  - Mirror testing is now complete



## GENTEX Auto Dimming Rearview Mirrors

### 12.0 Final Assembly

- 12.1 You are now ready for final assembly of vehicle panels and components. Operating instructions for your mirror are located in the Mirror User Guide provided with the mirror kit.
- 12.2 Calibrate the compass if mirror is equipped with feature. *See Mirror User Guide for instructions.*
- 12.3 Program your HOMELINK® buttons if equipped with feature. *See Mirror User Guide for instructions.*

### Mirror Kit Components

Mirror Kit	Harness and Parts
50-GENK2AM	Auto-Dimming Mirror Head, Mirror Jumper Harness, Universal Power Harness, Installation Instructions, Mirror User Guide
50-GENK5AM	Auto-Dimming/Compass Mirror Head, Mirror Jumper Harness, Universal Power Harness, Installation Instructions, Mirror User Guide
50-GENK 20A	Auto-Dimming/Compass/Temperature Mirror Head, Mirror Jumper Harness, Universal Power Harness, Temp Harness with Temp Probe, Installation Instructions, Mirror User Guide
50-GENK 40A	Auto-Dimming/ HOMELINK® Mirror Head, Mirror Jumper Harness, Universal Power Harness, Installation Instructions, Mirror User Guide
50-GENK45AM	Auto-Dimming/ Compass/HOMELINK® Mirror Head, Mirror Jumper Harness, Universal Power Harness, Installation Instructions, Mirror User Guide
50-GENK 50A	Auto-Dimming Compass/Temperature/ HOMELINK® Mirror Head, Mirror Jumper Harness, Universal Power Harness, Temp Harness with Temp Probe, Installation Instructions, Mirror User Guide

## Troubleshooting Tips

## GENTEX Auto Dimming Rearview Mirrors

Problem	SOLUTION
Temperature reading of -20 degrees F or lower.	Turn off ignition for 2 ½ hours. Do not unplug mirror. This problem is most often caused by connecting or disconnecting the temperature circuit while mirror is powered on.
Temperature reading higher than ambient air temperature and or rises after vehicle engine has warmed up.	Temp probe location improper. Move probe away from heat sources; radiator, engine, etc. Mount probe so it is exposed to free outside airflow.
Temperature reading low.	Clean corrosion from temp probe contacts and/or at harness connection. Corrosion changes the resistance in the temp circuit. Never use butt splices where wires are exposed to road spray – always use solder and heat shrink if green wires are cut.
Temperature display shows OC.	There is an open circuit in the green temperature wires. Confirm that temperature probe and temp harness are plugged in. Make sure mirror is not powered when connecting/disconnecting the temperature circuit. Check green wires for break or damage. Ohm test temperature probe; if open replace probe.
Temperature display shows SC,	There is a short circuit in the green temperature wires. Check green wires for pinch and or short to ground.





## MITO CORPORATION

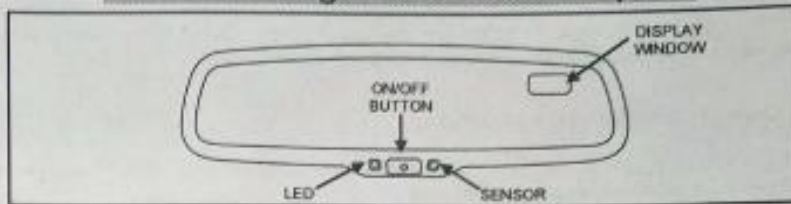
54905 C.R. 17 Elkhart, IN 46516  
574-295-2441 800-433-6466  
www.mitoCorp.com

### Auto-Dimming Mirror User Guide

Congratulations! You have purchased an Automatic-Dimming Mirror, manufactured by Gentex Corporation. During nighttime driving, this safety feature will automatically detect and eliminate dangerous rearview mirror glare.

Your new mirror may or may not have all of the features shown in this User Guide. Please refer only to the sections that pertain to the model mirror you have in your new vehicle.

#### Auto-Dimming Mirror with Compass

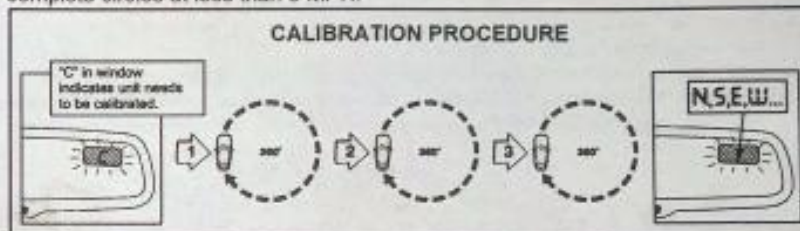


#### To Operate the Auto-Dimming Feature:

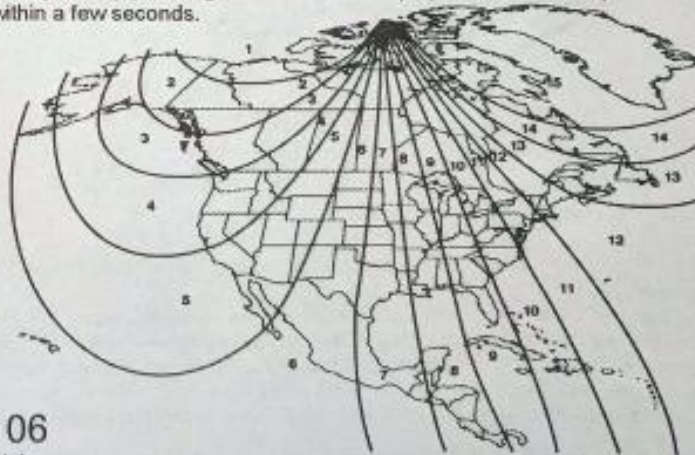
Push the "☺" switch to turn the mirror on/off. The auto-dimming feature is enabled when the green LED indicator is on.

#### To Operate the Compass Feature:

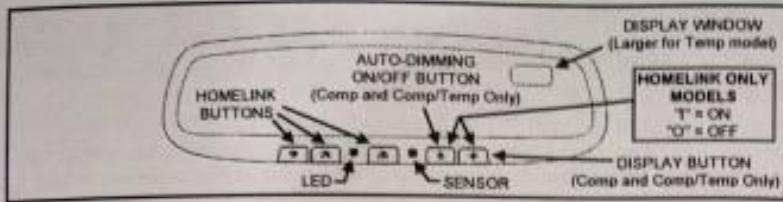
1. Push the display "☺" switch. The vehicle's directional heading will be displayed.
2. Pushing the "☺" switch a second time will turn off the visual display.
3. If the display reads "C", calibrate the compass by driving the vehicle in up to 3 complete circles at less than 5 MPH.



4. To adjust for compass variance:
  - a. Press the "☺" button for more than 9 seconds, or until the current zone number appears in the display.
  - b. Find your current location and variance zone number on the zone map below.
  - c. Press the "☺" button until the new zone number appears in the display. After you stop pressing the button, the display will show a compass heading within a few seconds.



# Auto-Dimming Mirror with HomeLink<sup>®</sup> Auto-Dimming Mirror with Compass and HomeLink<sup>®</sup> and Auto-Dimming Mirror with Compass, HomeLink<sup>®</sup> and Temperature

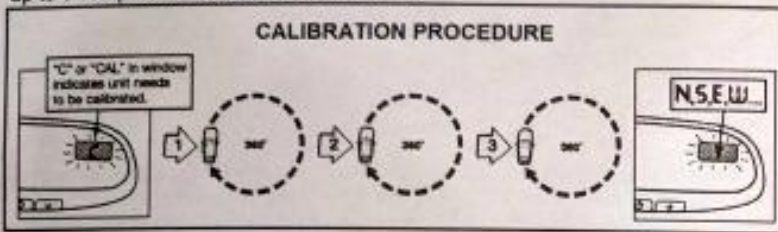


## To Operate the Auto-Dimming Feature:

Push the "0" switch (or "1", "0") to turn the mirror on/off. The auto-dimming feature is enabled when the green LED indicator is on.

## To Operate the Compass Feature:

1. Push the display "N" switch. The vehicle's directional heading will be displayed.
2. Pushing the "N" switch a second time will turn off the visual display.
3. If the display reads "C" or "CAL", calibrate the compass by driving the vehicle in up to 3 complete circles at less than 5 MPH.



4. To adjust for compass variance:
  - a. Press the "N" button for more than 9 seconds, or until the current zone number appears in the display.
  - b. Find your current location and variance zone number on the zone map below.
  - c. Press the "N" button until the new zone number appears in the display. After you stop pressing the button, the display will show a compass heading within a few seconds.



## To Operate the Temperature Feature:

1. Push the "N" switch. The vehicle's directional heading and outside temperature will be displayed.
2. Pushing the "N" switch a second time will turn off the visual display.
3. The temperature display can be changed to Celsius by depressing the "N" switch for 3 seconds, until a "C" appears by itself in the display window. Pushing the "N" switch again will toggle the display between Celsius and Fahrenheit. Five seconds of no switch activity returns the display to its normal directional and temperature reading.

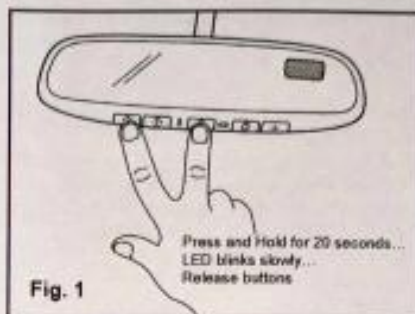


## To Operate the HomeLink® Feature:

If you have any questions or are having difficulty programming your HomeLink® buttons, please refer to [www.homelink.com](http://www.homelink.com) or call 1-800-355-3515.

### HomeLink® Programming Instructions:

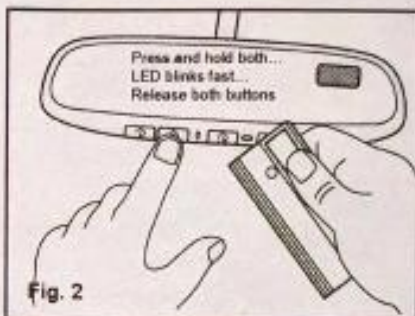
**WARNING!** Before programming HomeLink® to a garage door opener or gate operator, make sure that people and objects are out of the way of the device to prevent potential harm or damage. When programming a garage door opener, it is advised to park outside of the garage. Do not use HomeLink® with any garage door opener that lacks safety stop and reverse features as required by U.S. federal safety standards (this includes any garage door opener model manufactured before April 1, 1982). A garage door that cannot detect an object – signaling the door to stop and reverse – does not meet current U.S. federal safety standards. For more information, contact HomeLink® at [www.homelink.com](http://www.homelink.com) or by calling 1-800-355-3515.



1. To begin, press and hold the 2 outer HomeLink® buttons (to clear memory) until the indicator light (LED) blinks slowly (approximately 20 seconds). Fig. 1

2. Release both buttons.

**NOTE:** Do not hold the buttons for longer than 30 seconds. Do not repeat this step when programming additional devices to remaining buttons.

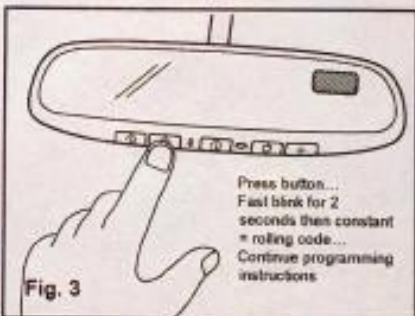


3. Position the end of the hand-held transmitter 1-3 inches away from the HomeLink® button you wish to program while keeping the the indicator light in view.

4. Simultaneously press and hold both the chosen HomeLink® and hand-held transmitter buttons. Fig. 2

**Do not release the buttons until step 5 has been completed.**

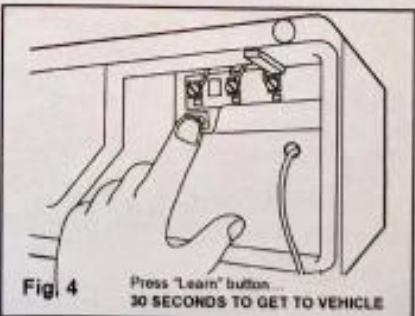
**NOTE:** Some gate operator and garage door openers may require you to replace this Programming step 4 with procedures noted in the "Gate Operator / Canadian Programming" section.



5. After the HomeLink® indicator light changes from a slow to a rapidly blinking light, release both the HomeLink® and hand-held transmitter buttons.

6. Press and hold the just-trained HomeLink® button and observe the indicator light.

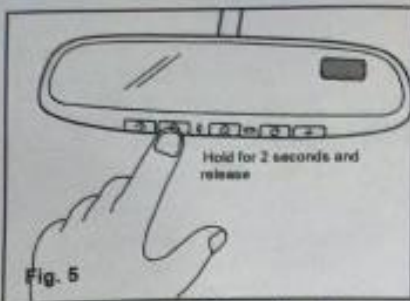
If the indicator light blinks rapidly for 2 seconds and then turns to a constant light, the device being programmed utilizes rolling code and programming is not complete until the following steps are completed. Fig. 3



7. On the garage door opener receiver (motor-head unit) locate the "learn" or "smart" button. This can usually be found where the hanging antenna wire is attached to the motor-head unit.

8. Firmly press and release the "learn" or "smart" button. Fig. 4

**NOTE:** You have 30 seconds to initiate step 9.



9. Return to the vehicle and firmly press, hold for 2 seconds and release the programmed HomeLink® button. Fig. 5
10. Repeat Step 9 a second time and possibly a third time (depending on brand of device).

**HomeLink® should now activate your rolling code equipped device.**

#### Gate Operator / Canadian Programming:

Canadian radio-frequency laws require transmitter signals to "time-out" or quit after several seconds of transmission – which may not be long enough for HomeLink® to pick up the signal during programming. Similar to this Canadian law, some U.S. gate operators are designed to "time-out" in the same manner.

If you live in Canada or you are having difficulties programming a gate operator by using the "Programming" procedures (regardless of where you live), replace "Programming HomeLink® step 4 with the following:

**NOTE:** If programming a garage door opener or gate operator, it is advised to unplug the device during the "cycling" process to prevent possible overheating.

4. Continue to press and hold the HomeLink® button while you press and release - every 2 seconds ("cycle") your hand-held transmitter until the frequency signal has successfully been accepted by HomeLink®. (The indicator light will flash slowly and then rapidly.)

Proceed with "Programming" step 5 to complete.

#### Erasing All Programmed HomeLink® Buttons:

Press and hold the two outer HomeLink® buttons (as shown in Fig. 1), releasing only when the HomeLink® indicator light begins to flash after 20 seconds. Do not hold for longer than 30 seconds.

**If you have any questions or are having difficulty programming your HomeLink® buttons, please refer to [www.homelink.com](http://www.homelink.com) or call 1-800-355-3515.**

#### Cleaning the mirror:

When cleaning the mirror, use a paper towel or similar material dampened with glass cleaner. Do not spray glass cleaner directly onto the mirror as damage to internal circuitry may result.

#### Troubleshooting Guidelines:

1. "C" or "CAL" is displayed in the display window
  - a. Perform calibration procedure.
2. Inaccurate compass direction
  - a. Perform compass zone setting procedure and then calibration procedure
  - b. Vehicle magnetics may have changed.
    - Press and hold the "O" button or the "N" button (if mirror has) for 9 seconds until a "C" or "CAL" appears in the display window.
    - Perform calibration procedure.

**NOTE:** Installing items such as a ski rack, antenna, luggage rack or recent body repair can cause changes to the vehicle's magnetic field. This may require that the compass be recalibrated by performing the recalibration procedure.

In the event that the vehicle is driven into a large magnetic field (near large electric motors, etc.), the compass may not function correctly.

3. The temperature display is reading significantly low
  - a. The temperature display may have been changed to degrees Celsius. Refer to the section of this User Guide pertaining to the temperature feature to correct.
4. The display window shows "SC" or "OC" instead of temperature
  - a. These problems must be corrected at your authorized Dealer Service Center.