SECTION V—LIGHTING SYSTEM—AUTOMATIC BEAM CHANGER—ELECTRONIC REAR VIEW MIRROR

1. AIMING THE HEADLAMPS

PRE-AIMING INSTRUCTIONS

Before installing Aimer Kit, Tool C-3674, Figure 3, complete the following pre-aiming instructions. Place vehicle on a level floor. Check front spring height. Adjust to specification—if necessary. Check tire inflation. Tire pressure should not vary more than 3-5 pounds. Rock vehicle sideways to allow spring shackles, et cetera to assume a normal position. If gasoline tank is not full, place a 100 pound weight in trunk of vehicle. There should be no other load in the vehicle, other than the driver. Remove headlamp doors. Thoroughly clean headlamp lenses.

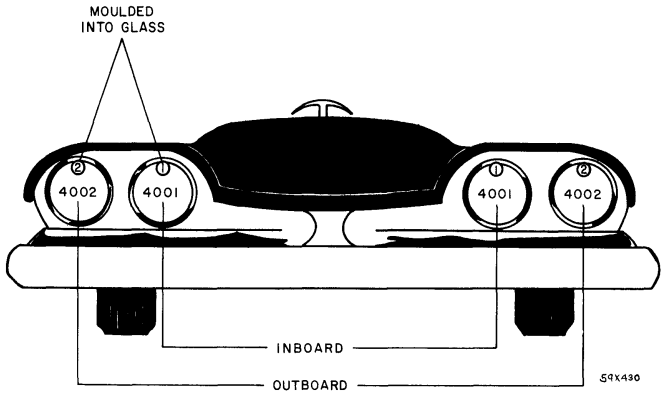


Figure 1—Headlamp identification

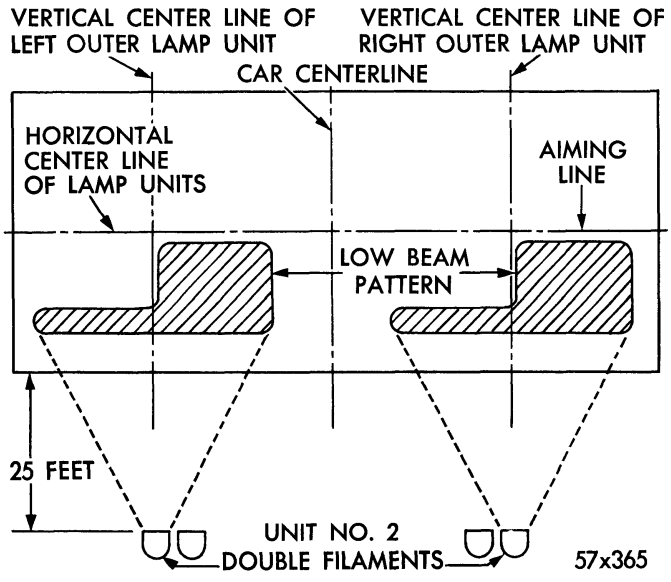


Figure 2—Outboard headlamp light pattern

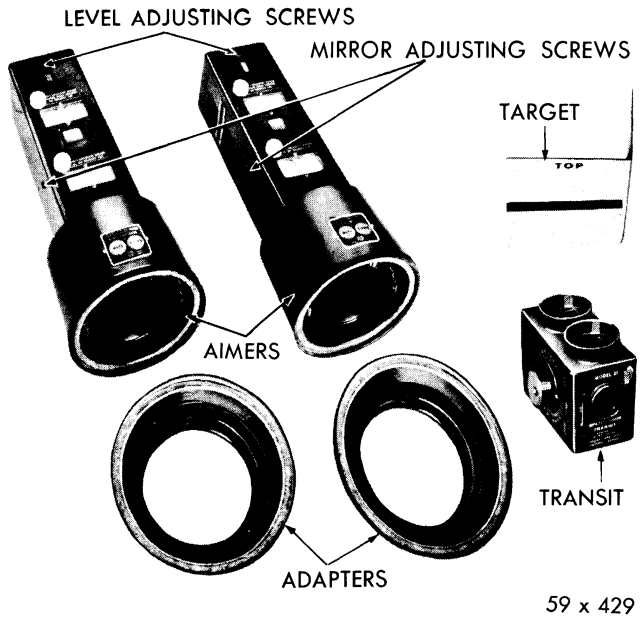


Figure 3—Mechanical aimer components

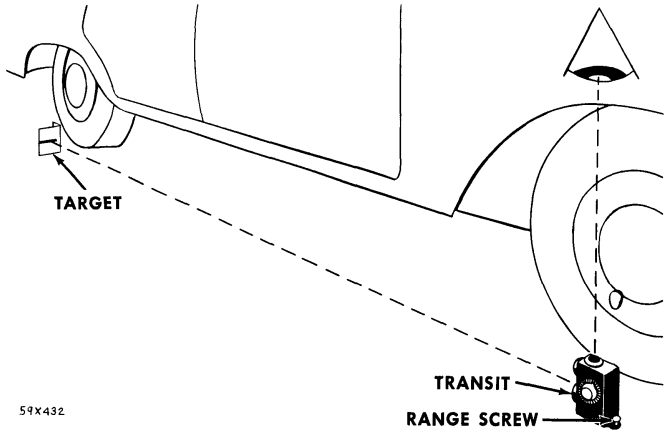


Figure 4—Determining slope of floor

COMPENSATING AND MOUNTING THE AIMERS

Determining Slope of Floor—Place transit on floor in line with vertical centerline of the right front wheel. Place split image target in like position at right rear wheel, see Figure 4. Adjust range screw, on transit until target split image coincides or merges into one unbroken line.

CAUTION

Make sure that line of sight is perpendicular from the eye to the viewing port of the transit and that target image is centered in viewing port of transit.

LAMP CHART

Models	M1 and M2	
Location	Candle Power	Lamp Number
Headlamp	Inboard—37.5 Outboard—37.5 50.0	Inboard—4001 Outboard—4002
Parking and Turn Signal	32-4	1034
Tail and Stop Lamp	32-4	1034
Direction Indicator Tell Tale	2	57
License Plate Lamp	3	67
Back-Up Lamp	21	1073
Headlamp Beam Indicator	2	57
Dome Lamp	15	1004
Clock Lamp	2	1816
Radio Dial Lamp	2	1816
Glove Box Lamp	2	57
Speedometer Lamp	2	57
Generator Indicator Lamp	2	57
Oil Pressure Indicator Lamp	2	57
Automatic Transmission Lamp	2	57

CIRCUIT BREAKER AND FUSE CHART

Unit	Type of Protection
Headlamp Headlamp Beam Indicator Parking Lamp	22.5 amp.—Circuit Breaker
Tail Lamp Stop Lamp License Plate Lamp Instrument Lamp Dome Lamp	15 amp.—Circuit Breaker
Clock	SFE-10—Fuse
Radio	SFE-7.5—Fuse
Window Lift Seat Adjuster	30 amp.—Circuit Breaker
Windshield Wiper	5 amp.—Circuit Breaker (single speed) 6 amp.—Circuit Breaker (variable speed)
Heater	SFE-20—Fuse (Hot Water) SFE-30—Fuse (Gas)
Air Conditioning	SFE-20—Fuse (Rear Unit)

Turn dial on side of transit until bubble in spirit level is centered. When bubble is centered, note plus or minus reading on compensator scale. This figure indicates the degree of slope of the floor and must be transferred to each aimer as follows: With a screwdriver, turn adjusting slot of floor level compensator in each aimer, until the correct plus or minus figure (or fractional part) appears in the proper window, as shown in Figure 5.

Figure 5—Adjusting floor level compensator

MOUNTING AND ADJUSTING THE AIMERS—While holding an aimer in alignment with the lens of one *outboard* headlamp, bring aimer up to and against headlamp lens.

> **CAUTION**
>
> ***Make certain that headlamp lens pads are making full contact with aimer mounting flange and aimer target is facing inboard.***

Push release lever forward (to expel air from suction cup) and while holding aimer firmly against headlight aiming pads, slowly pull release lever back until the spring lock engages in the slot.

Mount the second aimer on the other outboard headlamp, in the same manner. On each aimer, set pointer to numeral 2 on the down side of the down-up scale. On each aimer position the pointer, of the RIGHT-LEFT scale, at ZERO, see Figure 6.

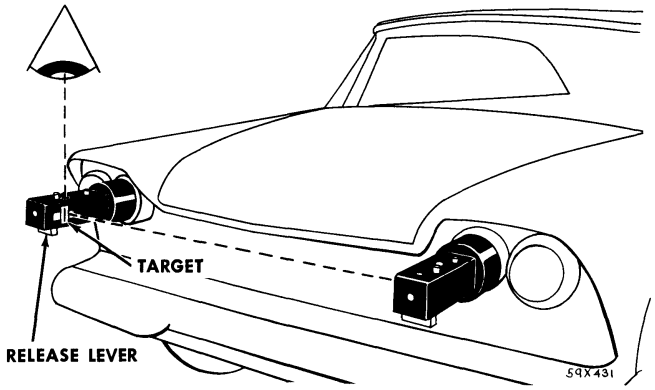


Figure 6—Adjusting aimers

ADJUSTING THE HEADLAMPS

Horizontal Adjustment—With pointer of RIGHT-LEFT scale still set at ZERO, sight through the aimer viewing port, see Figure 7.

> **CAUTION**
>
> ***Make sure that line of sight is perpendicular from eye to viewing port of aimer and that target image is centered in viewing port of aimer.***

While sighting through viewing port of aimer, turn horizontal adjusting screw on headlamp until split image target line merges into one unbroken line.

> **NOTE**
>
> ***To remove backlash be sure to make final adjustment by turning headlamp horizontal adjusting screw in a clockwise direction.***

Make horizontal adjustment on other *outboard* headlamp in the same manner. Remove aimers, from *outboard* headlamps, by releasing the spring lock at rear (bottom) of aimer and pushing release lever forward.

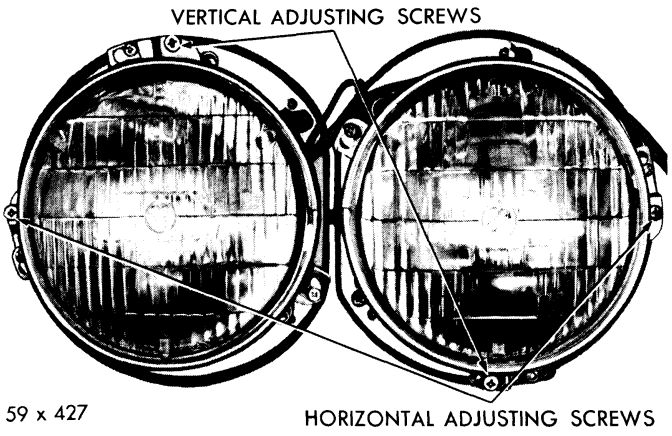


Figure 7—Headlamp assembly

> **CAUTION**
>
> ***Do not attempt to remove aimers by pulling them away from headlamp lens—slide suction cup downward and away from lens.***

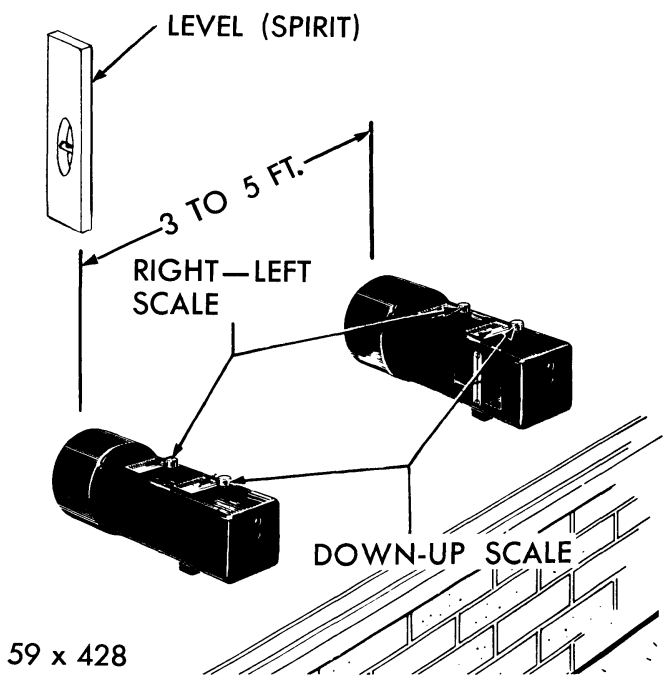


Figure 8—Checking calibration of aimer

VERTICAL ADJUSTMENT—Exert caution to avoid disturbing installed position of aimers. Turn vertical adjusting screw on headlamp in a counterclockwise direction to bring the bubble of the spirit level on aimer to car side of center. Then turn screw clockwise until bubble is centered for correct aim and elimination of backlash. Make vertical adjustment on other *outboard* until in same manner. Recheck target alignment on each side and readjust horizontal aim, if necessary.

Proceed to adjust the *inboard units* by following the instructions as outlined for the outboard headlamps. Replace headlamp doors.

CHECKING HEADLAMP AIM

Follow instructions as outlined in paragraph titled Pre-Aiming Instructions and in paragraph titled Compensating and Mounting Aimers.

> **NOTE**
>
> ***It is not necessary to remove headlamp doors in order to make a quick check of headlamp aim.***

For horizontal check—turn RIGHT-LEFT SCALE knob until split image is in alignment. If RIGHT or LEFT portion of scale exceeds the following values, the lamps should be aimed.

	RIGHT	LEFT
No. 1 Unit	4	4
No. 2 Unit	4	0

For vertical check—turn DOWN-UP scale knob until spirit level is centered. If DOWN or UP portion of scale exceeds the following values, the lamps should be aimed.

	DOWN	UP
No. 1 Unit	½ to 3½	0
No. 2 Unit	½ to 3½	0

CHECKING AIMER FOR CALIBRATION

Using a carpenter or stone mason level of known accuracy, locate a true vertical plate glass window or smooth surface, see Figure 8. Set DOWN-UP pointer on DOWN 2. Set RIGHT-LEFT pointer and floor level compensator at "O". Secure aimers to glass or smooth surface three or five feet apart so split image targets can be located in the viewing ports. If bubble is centered in vial, vertical calibration is correct. If bubble is not centered, make adjustment as outlined in following paragraph titled Readjusting Aimer Calibration. The horizontal aim is correct if the targets on opposite aimers are aligned in viewing ports. If targets are not aligned in viewing ports, make necessary adjustments as outlined in following paragraph titled Readjusting Aimer Calibration.

READJUSTING AIMER CALIBRATION

Set DOWN-UP pointer at DOWN-2 and RIGHT-LEFT pointer and floor compensator scale at "O". To make the DOWN-UP adjustment, rotate level adjusting screw until bubble is centered in spirit leval. To make the RIGHT-LEFT adjustment, rotate mirror adjusting screw until target split image becomes aligned, see Figure 9.

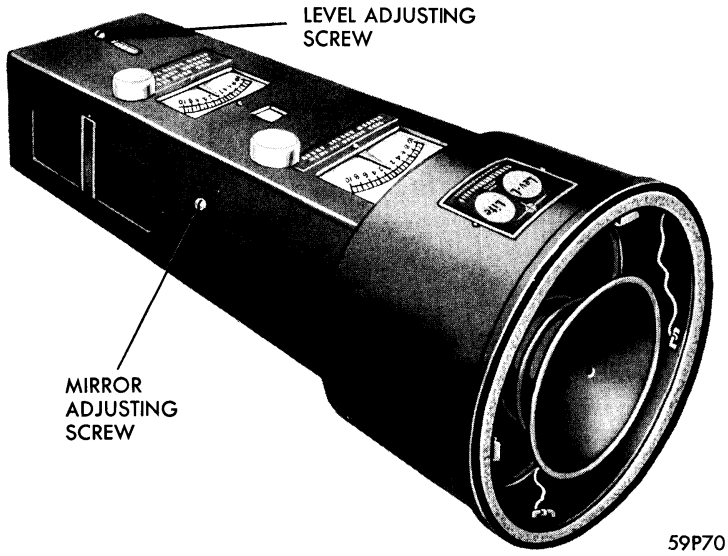
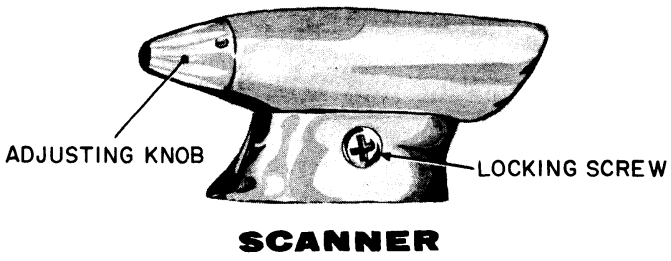


Figure 9—Readjusting aimer calibration

2. AUTOMATIC BEAM CHANGER

The automatic beam changer is an automatic headlight control unit which senses the headlight intensity from other vehicles and automatically adjusts the headlights to a bright or dim setting.

A scanner and base assembly is mounted on top of the instrument panel. The control unit is mounted on a convenient structural part (grounding purposes) of the vehicle's body, see Figure 10.



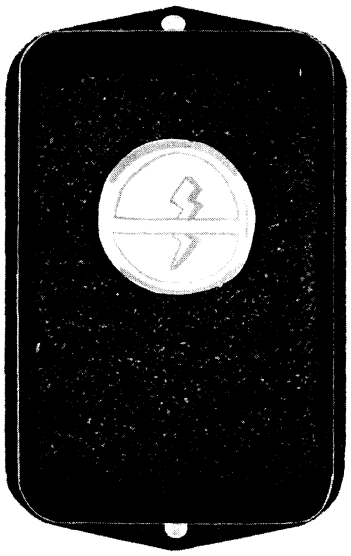


Figure 10—Scanner and control unit

OPERATION

The automatic beam changer will dim the headlights when an oncoming car is seen at a distance of approximately 1200 feet. The unit will reset the headlights on "bright" within approximately ½ second after the approaching car has passed.

The headliight setting can be interrupted by using the conventional dimmer switch. If the unit has a "bright" setting and the driver feels that a "dim" setting required, he can overide the automatic control by depressing the dimmer switch to obtain the "dim" condition. Automatic operation is restored when the driver again depresses the dimmer switch.

DRIVER ADJUSTMENTS

A knob, located at the rear of the scanner unit, Figure 10, provides a sensitivity adjustment. If the headlights do not "dim" quickly enough upon approaching another car, it is an indication that sensitivity is set too "low" and correction is made by turning the scanner knob clockwise (to the right). If the headlights "dim" too soon, sensitivity can be decreased by turning the scanner knob *counterclockwise* (to the left).

AIMING THE AUTOMATIC BEAM CHANGER

Pre-aiming Instructions—Before attempting to aim the automatic beam changer, complete the following pre-aiming instructions: Place vehicle on a level floor. Check front spring height. Adjust to specifications, if necessary. Check tire inflation. Tire pressure should not vary more than 3-5 pounds. Rock vehicle sideways to allow spring shackles, et cetera to assume normal position. If gasoline tank is not full, place a 100 pound weight in trunk of vehicle. There should be no other load in the vehicle, other than the driver. If the vehicle is placed in an area in which the floor is not level, it will be necessary to take this condition into consideration when "aiming" the "scanner" unit. Refer to aiming the "scanner" unit.

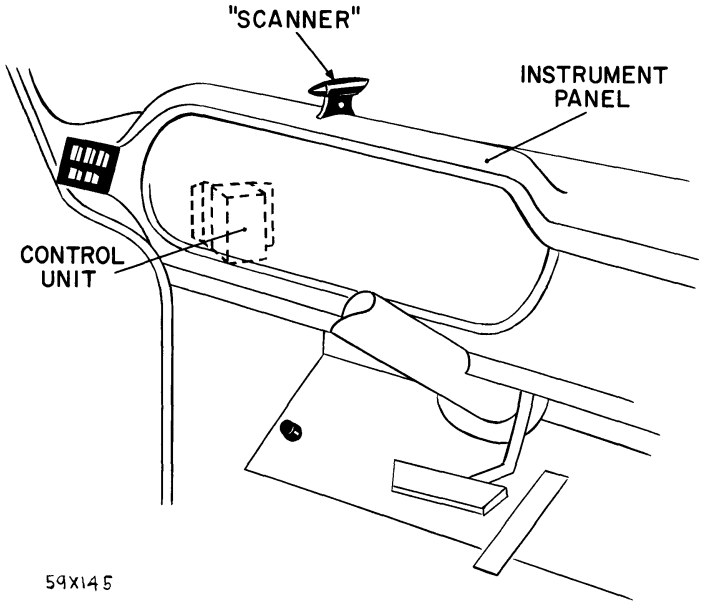


Figure 11—Location of scanner and control unit

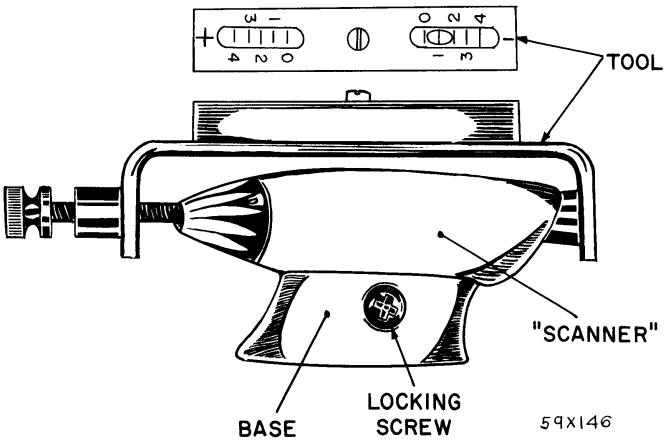


Figure 12—Scanner and leveling tool

AIMING THE "SCANNER"

Mount "scanner" aimer, Tool C-3697, on the "scanner" unit as shown in Figure 12. Make sure that all conditions listed under "pre-aiming Instructions" have been met, before proceeding with the aiming operation.

Loosen the cross-racess head locking screw, Figure 11. Just enough to permit free movement of the "scanner" through its arc, as controlled by the mounting base. (Total angular deflection of the "scanner" unit is six degrees).

If headlamp aimer kit, Tool C-3674 is available, use the split image transit and target assembly to determine slope of floor, as outlined in the directions contained in the aimer kit.

Move "scanner" forward or backwards on base (through arc) to bring the leading edge of the bubble of "scanner" aimer, Tool C-3697, in alignment with the proper "plus" or "minus" value (on level dial) which was obtained from the transit of aimer kit, Tool C-3674.

For example: If transit indicates that a minus 2 correction for slope is necessary, bring leading edge of bubble of aimer Tool C-3697, to the minus 2 index line. Refer to Figure 12. Tighten locking screw securely and then recheck position of bubble. If position of bubble has changed, loosen locking screw slightly and make necessary correction to bring bubble once more into desired position. Retighten locking screw securely and remove "scanner" aimer tool.

If headlamp aimer, Tool C-3552, is available, follow the instructions to determining a "plus" or "minus" slope condition of the floor proceed to align the bubble of "scanner" aimer, Tool C-3697 as outlined in the previous paragraph.

3. ELECTRONIC REAR VIEW MIRROR

DESCRIPTION

The electronically operated rear view mirror, as shown in Figure 13, is a self-dimming rear view mirror which provides maximum rearward vision at night, since the bright reflecting surface of the mirror is in use—except when glaring light strikes its surface. The electronic glare detecting mechanism is housed entirely within the mirror case. Sensitivity is selected by a three-position switch on the front of the mirror bezel, Figure 13, "off" locks the mirror in the normal "bright" position. Selection of either "city" or "hi-way" switch position permits the mirror to respond to glare conditions. It is less light-sensitive when "city" has been selected and therefore response to neon signs, streetlights, etc. is held to a minimum.

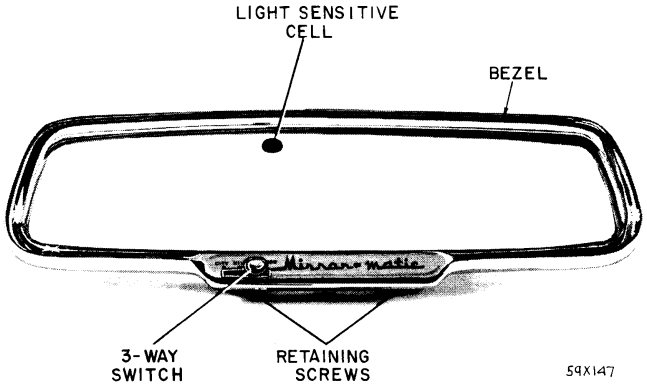


Figure 13—Electronic rearview mirror

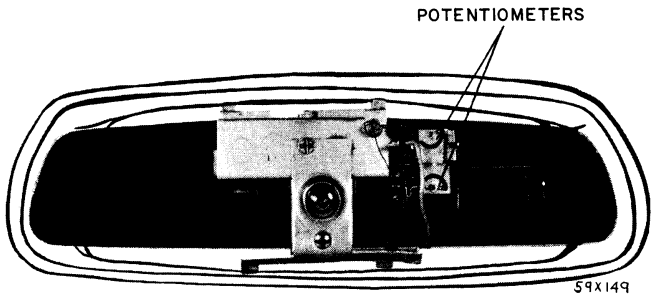


Figure 14—Electronic rearview mirror—internal view

OPERATION

The heart of the automatic tripping mechanism is a tiny photo-electric cell which "sees" through a small aperture in the silvered mirror surface, Figure 13. Light striking the cell generates a small current which increases with increasing light intensity. When the light intensity becomes high enough to cause annoying

glare, the current is enough to activate a miniature amplifier and solenoid assembly which pulls the prism mirror a few degrees upward to reflect a dim image off the front surface of the glass and into the driver's eyes. As long as glare is present, the mirror will remain in its "dim" position, returning immediately to its normal "bright" position when the glare drops below a pre-set level.

DRIVER ADJUSTMENT (Positioning Mirror)

When adjusting the position of mirror-matic for best visibility, first turn off the headlights (headlight circuit energizes mirror system) and set the mirror for brightest image.

When adjustment for best visibility is obtained, lock mirror in position by turning lock nut (clockwise) at the mirror support base.

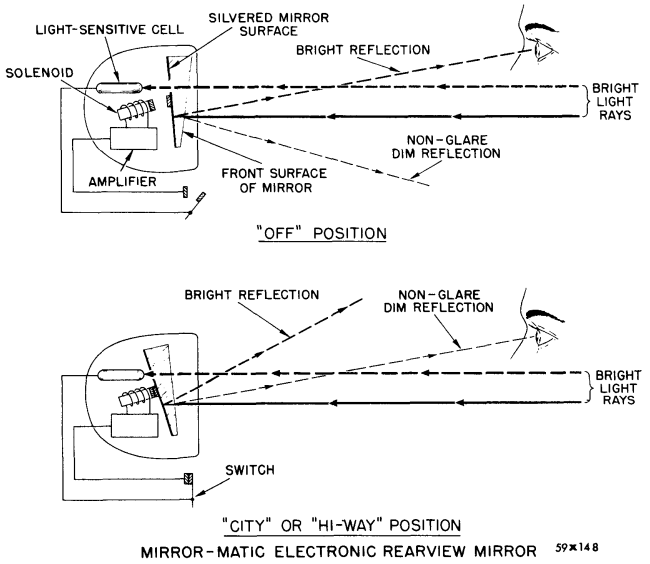


Figure 15—Electronic rearview mirror—operation

SERVICE ADJUSTMENTS

If a glare condition exists with the switch, Figure 13, set either in the "city" or "hi-way" position, it is an indication that the sensitivity in either or both of these positions is too low.

Sensitivity can be raised by making an internal adjustment at the mirror assembly as follows: Remove plastic knob from 3-position switch by carefully pulling outward on plastic knob. Remove the two screws and remove bezel by lifting bezel outward and upward (to clear metal retaining tabs).

Expose internal mechanism of mirror assembly by lifting top portion of back cover upward (to clear metal retaining tabs) and moving back cover rearward over mirror support. Move back cover rearward only far enough to provide access to potentiometer adjusters. To increase sensitivity for "hi-Way" driving, turn the arm of the potentiometer marked "Hi-Way" in the direction indicated by the arrow.

NOTE

To decrease sensitivity of either or both the potentiometers, turn potentiometer arms in the direction opposite to direction indicated by arrow.

Replace back cover by positioning back cover over the two metal tabs and aligning screw holes in bottom of cover with threaded holes in mirror support.

Install bezel by aligning slots at top of bezel with metal tabs and aligning screw holes in bottom of bezel with threaded holes in mirror support replace screws, Figure 13, and tighten securely. Replace plastic switch knob. Adjust mirror to desired position and test operation of unit.