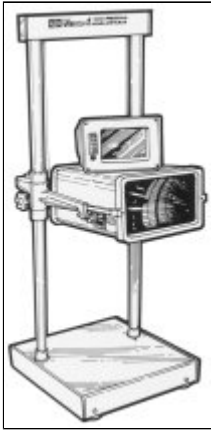


Vision 1 Instruction Manual

Pages 1-2

INTRODUCTION AND EQUIPMENT PRECAUTIONS

Congratulations! You now have the most advanced headlamp aiming device in the world. The Vision 1™ Image Processing Headlamp Aimer provides factory-precise analysis to the automotive aftermarket. Precision laser positioning, high technology photometric analysis, and computer quick calculations make the Vision 1™ the most accurate headlight aiming device available.



The versatility of the Vision 1™ System enables you to aim nearly any headlamp on any make of vehicle throughout the world. Standard, auxiliary, fog, rectangular, round, or aerodynamic headlamps can be precisely aimed on low or high beams, regardless of size.

The precise accuracy of laser technology is used to determine the vehicle centerline and optical center of the headlamps. Computer image processing technology forms the basis for the Vision 1™ System. It analyzes and displays the light pattern as it would appear on the roadway ahead of the vehicle. Upon positioning the Vision 1™ in front of the headlamp, a digital translation of the headlight beam is displayed on the monitor, graphically illustrating the ideal alignment position in inches or centimeters. While viewing the monitor, you adjust the headlamp adjustment screws to align the beam pattern cross-hairs with the visual aim indicators.

Aiming pads or adaptors are no longer a necessity and with the interchangeable plug-in aiming and language modules, your Vision 1™ will never become obsolete and always be on the leading edge of technology.

This user manual should be read in its entirety before operating the Vision 1™ System. If you have any questions, please contact a HOPPY® representative, at 1-800-390-7904 for further information.

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CAUTION!

THIS DEVICE CONTAINS A CLASS IIIa LASER USED IN THE AIMING PROCESS.

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WARRANTY AND LIMITATION OF REMEDY

Seller warrants that the items sold will be free from defects in material and workmanship for a period of one year from the date of purchase; provided, however, that Seller's maximum liability and Buyer's exclusive remedy, for any goods which are or become defective, shall be, at Seller's option, the repair of the defective goods or the replacement thereof with conforming goods, f.o.b. Seller's plant, or the reimbursement to the Buyer of the contract price for the defective goods. Repair or replacement of defective goods or reimbursement for the contract price therefore, shall be made only upon return of the defective goods to Seller at Seller's cost, but only after inspection of the goods by Seller and written instructions by Seller to Buyer regarding the shipment of the goods to Seller.

Other than as set forth above, SELLER MAKES NO WARRANTY OF ANY KIND, WHATEVER, EXPRESS OR IMPLIED; AND ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS HEREBY DISCLAIMED BY THE SELLER.

Seller shall not be liable for any consequential damages, loss or expense arising from the use or the inability to use the goods for any purpose whatsoever.

There are no warranties by Seller covering components, parts or accessories specified by the Buyer and manufactured by someone other than Seller. Such warranties as may be furnished to Seller by the manufacturer of such items will be extended to the buyer by the Seller.

The Vision Headlamp Aiming Unit is an optical aiming system designed to aim headlamps that comply with the Society of Automotive Engineers recommended practices described in J579, J599 and J600. All lamp and lamp patterns do not conform to these recommended practices. While the Vision Headlamp Aiming Unit is not designed for use on lamp and lamp patterns which do not conform to the recommended practices, the unit includes alternate methods which may conform to the recommended practice described in J579.

SELLER MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, WHATEVER, THAT THE VISION HEADLAMP AIMING UNIT WILL AIM HEADLIGHTS WHICH DO NOT CONFORM TO THE SOCIETY OF AUTOMOTIVE ENGINEERS RECOMMENDED PRACTICES DESCRIBED IN J579, J599 AND J600.

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SECTION ONE

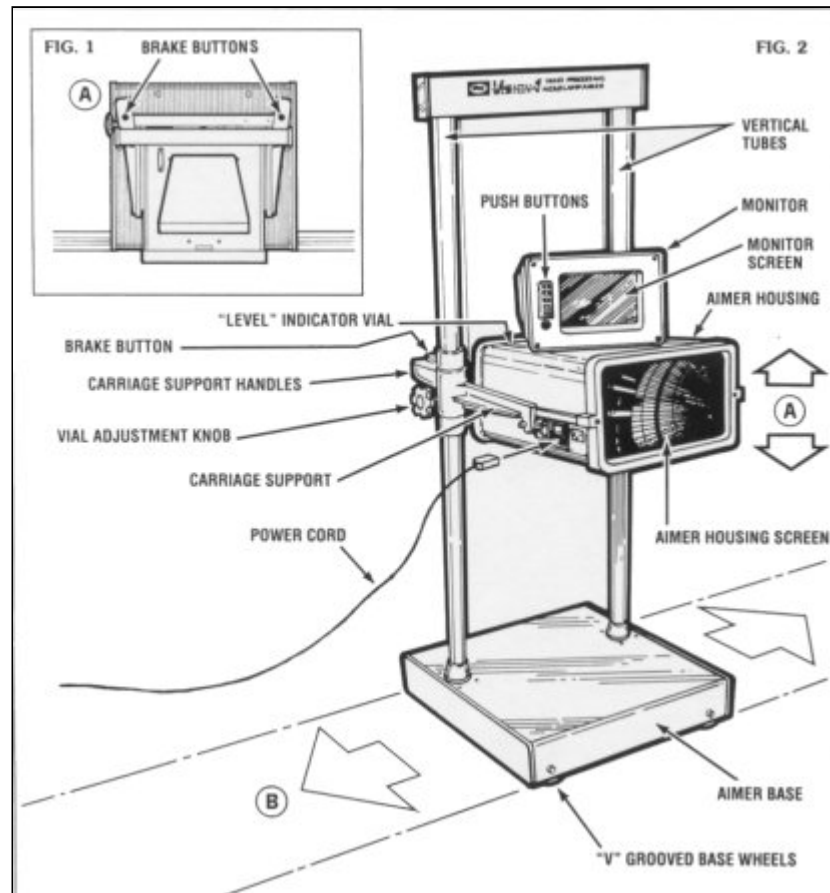
1.1 ASSEMBLY

Inspect the aimer carefully for any signs of external damage. If any damage is noted, contact a HOPPY® representative for further information.

Clean and inspect the vertical tubes. Spray a light machine oil onto a clean rag to clean what dust and debris from the vertical tubes may have accumulated during shipment.

Release the vertical brakes by gripping the carriage support handles and depressing the brake buttons. The brake buttons are located (FIG. 1, A) on top of the right and left side of the carriage support piece that holds the aimer housing (FIG. 2, A) to verify that the vertical tubes have not been damaged in transit. Raise the aimer housing several feet and release the brake buttons. Check for any vertical movement of the unit to verify the proper operation of the brakes.

Locate a clear area of shop floor and roll the unit back and forth (FIG. 2, B) several times across 10 feet of floor. Observe that the unit rolls smoothly in a straight line.



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SECTION ONE

ASSEMBLY (CONT'D.)

Locate the plug-in modules for your aimer. Check each module for damage prior to inserting into module ports at rear of aimer housing. There are three (3) module ports.

IMPORTANT! - POWER MUST BE OFF WHEN INSERTING MODULES!

Insert aiming module into port two (2). Insert module port cover(s) in remaining port(s). Insert the power cord provided with the unit into the power inlet on the side (FIG. 2, C) of the aimer housing.

Insert the male end of the power cord into a "grounded" receptacle which has 110-120 VAC power (U.S. and Canada only).

If your aimer has the printer option, install the printer on the aimer carriage cross piece on the back of the aimer (FIG. 3, A). Install the printer module (FIG. 3, B) and printer cords (FIG. 3, C). Printer module must be inserted into module port number 1.

Insert the printer power supply provided into the power receptacle located next to the aimer On/Off switch (FIG. 3, D).

The optional printer is powered by the aimer control switch. To activate, press the "SEL" button on printer. A lighted "on-line" light located on printer will verify that printer is operational (FIG. 3, E).

See instructions for printer included with printer.

FIG. 2

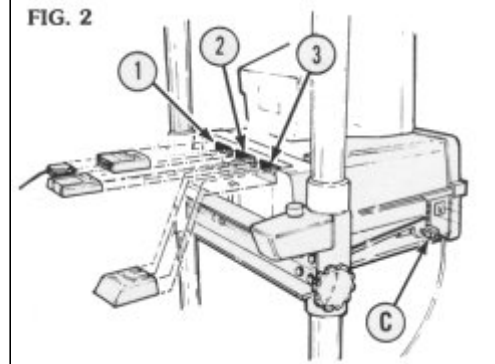
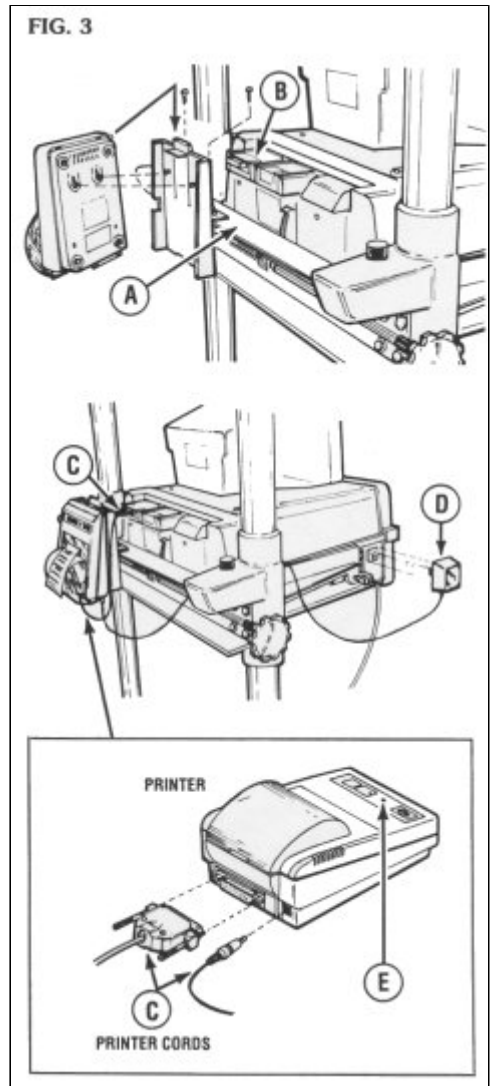


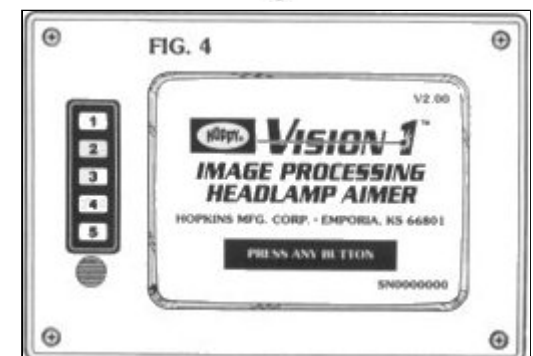
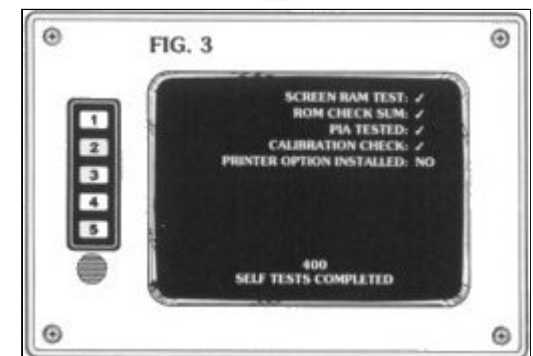
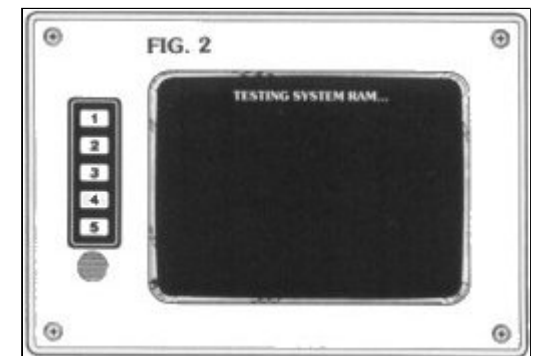
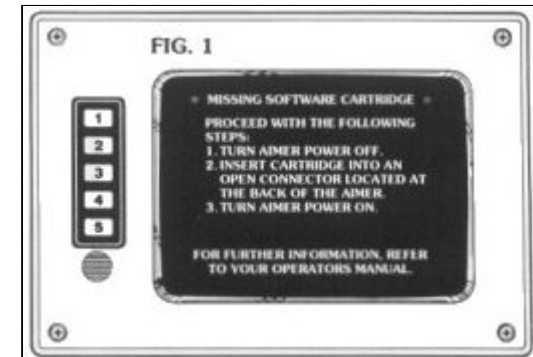
FIG. 3



SECTION TWO

2.1 AIMER PREPARATION

Place the power switch on the side of the aimer housing in the "on" position. For the unit to work, it must have a cartridge inserted. If no cartridge is installed, this screen comes up; follow instructions (FIG. 1). The unit will perform several self tests (FIG. 2 and FIG. 3). If a calibration problem is noted, the monitor will display the error. Should the monitor display an error message upon startup, reference the Trouble-Shooting Guide, Section Seven. If corrective action does not rectify the problem, contact a HOPPY® Customer Service Representative at 1-800-390-7904, for corrective action. If no problems are detected, the unit will display the "HOPPY®" logo screen after approximately ten seconds (FIG. 4).



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SECTION TWO

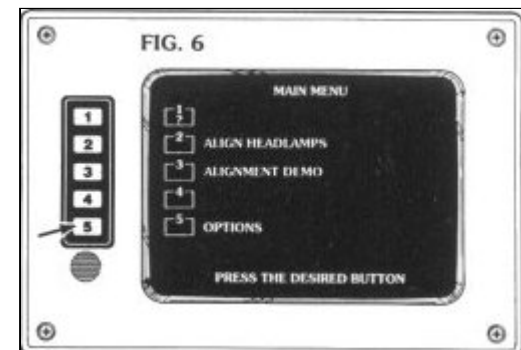
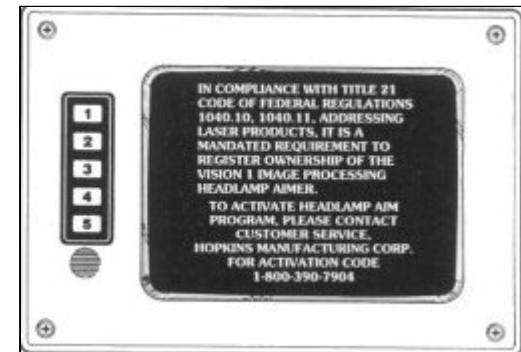
THE NEXT SCREEN IS THE "ACTIVATION" SCREEN. (TO COMPLY WITH TITLE 21, CODE OF FEDERAL REGULATIONS 1040.10, 1040.11, ADDRESSING LASER PRODUCTS, IT IS A MANDATED REQUIREMENT TO REGISTER OWNERSHIP OF THE VISION 1™ IMAGE PROCESSING HEADLAMP AIMER.) WHEN YOU HAVE REACHED THIS SCREEN, CONTACT A HOPPY® CUSTOMER SERVICE REPRESENTATIVE AT 1-800-390-7904, FOR YOUR ACTIVATION CODE. THIS ACTIVATION CODE IS A ONE TIME ENTRY FUNCTION PERFORMED AT YOUR LOCATION.

Once the activation code is entered, the aimer is ready for "On-Site" preparation.

The Vision 1 has been calibrated for optical accuracy at the factory; however, you must input certain settings to tailor the aimer to your facility. The SET OPTIONS menus will allow the operator to:

1. Determine unit of measurement, inches or centimeters.
2. Enter floor slope for each of the aiming areas.
3. Adjust aim OK window as desired.
4. Select desired aiming method.
5. Set unit for Novice or Expert operation, (Expert Mode on or off).
6. Set unit for track or laser alignment method.

After the unit has been turned on, the activation code has been successfully entered, and the aimer is displaying the Main Menu (FIG. 6), press the SET OPTIONS button (Button 5) to continue with the aimer preparation.



NOTE: Throughout various screens, the buttons are labeled to assist you. The label abbreviation descriptions are:

1. [?] - HELP screen for the screen displayed.
2. [P] - PREVIOUS allows operator to return to screen previous.
3. [PR] - PRINT allows operator to print aim measurements.
4. [M] - MAIN MENU will return program to Main Menu.
5. [OK] - OK allows operator to proceed to next screen when function described on screen has been performed.

SECTION TWO

2.2 SELECT MEASUREMENT

From the "SET OPTIONS" screen (FIG. 7), press the "SELECT MEASUREMENT IN/CM" button (Button 1). This will allow the operator to select (FIG. 8) either inch increments, (Button 3), or centimeter increments, (Button 4). When the desired measurement is displayed as active at bottom of the screen (FIG. 8), press the "SAVE SETTINGS" button, (Button 5), to continue.

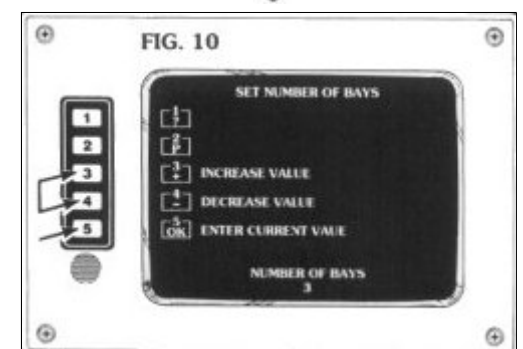
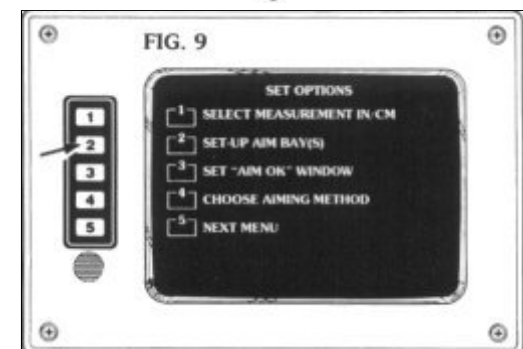
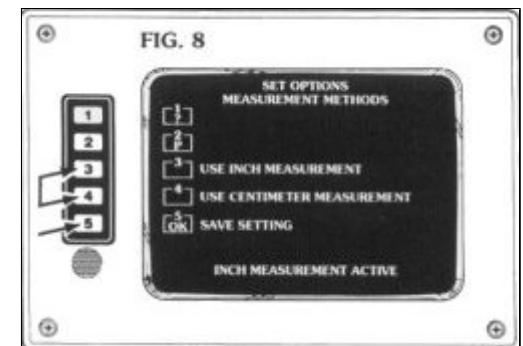
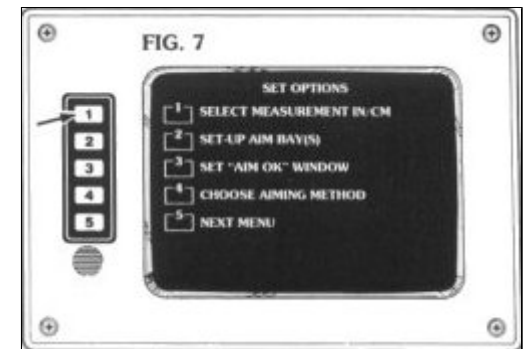
2.3 SETUP AIMING BAY(S)

For aiming areas, select floor surfaces that are reasonably level. Avoid extremes and variable slopes caused by floor drains.

From "SET OPTIONS" screen, press "SETUP AIM BAY(S)", (Button 2).

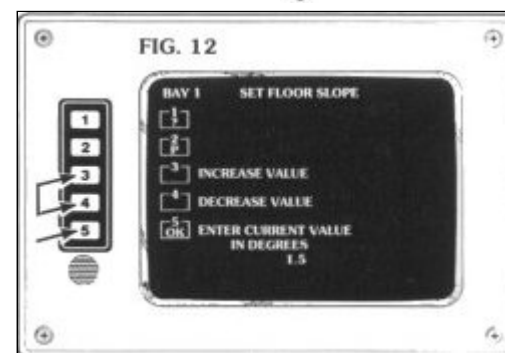
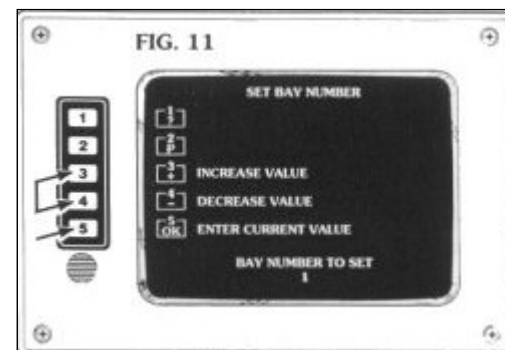
This menu (FIG. 10) allows the operator to select from one to thirty areas to be designated as aiming bays.

Enter the number of separate aiming bays to be used by pressing the "INCREASE VALUE" or "DECREASE VALUE" button(s), (Button 3 or Button 4). When the number displayed is the number of separate aiming areas used, press the "ENTER CURRENT VALUE" button, (Button 5), to continue with the aimer preparation.



SECTION TWO

If more than one bay is entered, the next menu will request the selection of the bay number (at the bottom of screen), (FIG. 11), currently being setup. Use the "INCREASE VALUE" or "DECREASE VALUE" buttons (Button 3 or Button 4) to select the desired bay number. When the correct bay number is displayed, press the "ENTER CURRENT VALUE" button, (Button 5), to continue with the aimer preparation.

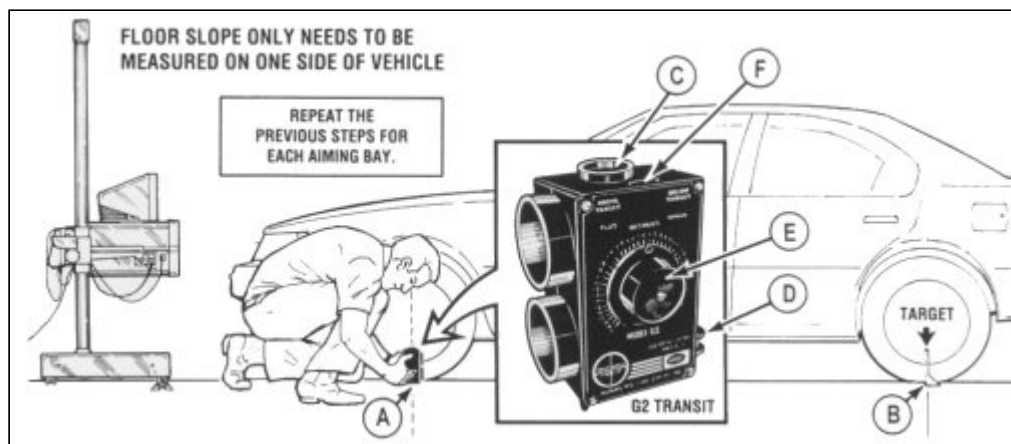


2.4 SET FLOOR SLOPE

Since few shop areas have the same floor slope, the floor slope of each aiming bay must be individually measured and entered. A Hoppy® Model G2 split image transit is provided to measure floor slope.

This function allows changing the floor slope for each bay. To determine the floor slope of the aim bay area, use the Hoppy® Model G2 split image transit and target provided. Place the transit at the front wheel (either side) of the vehicle (A) and place the target at the rear wheel (B) of the same side. Looking through the viewing window on top of transit (C), turn the small thumb screw knob (D) until the black lines on the target are in a straight line. Turn the level indicator dial (E), on side of transit, until the bubble is centered (F). Floor slope reading is indicated by level/indicator dial (E). A plus (+) reading indicates vehicle is nose high. Enter the value measured by using the "INCREASE VALUE" button (Button 3) for a plus reading, or "DECREASE VALUE" button (Button 4) for a minus (-) reading. Reading on level indicator should be rounded up to the nearest tenth (0.1) of degree. (See instruction sheet with transit for additional details.) Press and hold the appropriate button (Button 3 or Button 4) until the proper value is shown at the bottom of the screen (FIG. 12). When the proper value is displayed, press the "ENTER CURRENT VALUE" button, (Button 5), to return to the SET OPTIONS screen.

To enter the floor slope values for other aiming bays, press the "SETUP AIM BAY(S)" button and repeat the previous procedure for each aiming bay.



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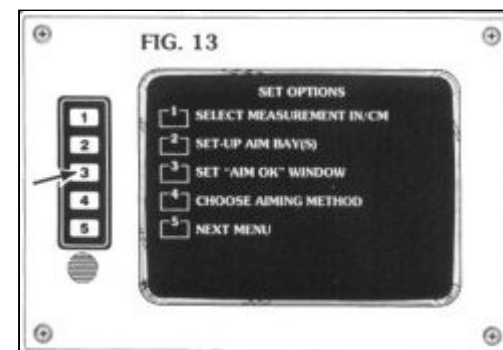
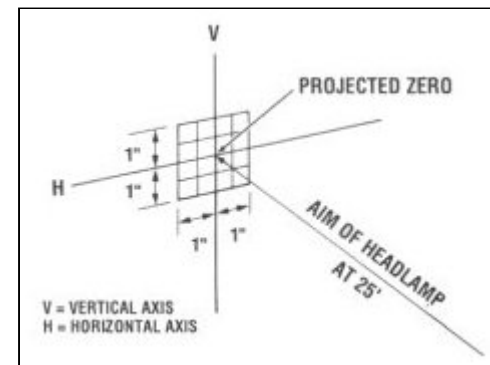
CONVERSION CHART Degrees to Inches

	Degrees		Inches	
	0.1° +/-	at 25 Feet	0.523" +/-	
	0.2° +/-	at 25 Feet	1.046" +/-	
	0.3° +/-	at 25 Feet	1.569" +/-	
	0.4° +/-	at 25 Feet	2.092" +/-	
	0.5° +/-	at 25 Feet	2.615" +/-	
1% Deviation	0.6° +/-	at 25 Feet	3.138" +/-	1% Deviation
	0.7° +/-	at 25 Feet	3.661" +/-	
	0.8° +/-	at 25 Feet	4.184" +/-	
	0.9° +/-	at 25 Feet	4.707" +/-	
	1.0° +/-	at 25 Feet	5.230" +/-	
	1.1° +/-	at 25 Feet	5.753" +/-	
	1.2° +/-	at 25 Feet	6.276" +/-	
	1.3° +/-	at 25 Feet	6.799" +/-	
	1.4° +/-	at 25 Feet	7.322" +/-	
	1.5° +/-	at 25 Feet	7.845" +/-	

2.5 AIM OK WINDOW

The AIM OK WINDOW defines the maximum allowable plus (+) or minus (-) measurement from zero of the horizontal and vertical aim axis at twenty-five (25) feet (7.6 meters). Lamps which measure within the allowable limits will register an "AIM OK" indicator at bottom of screen.

At the "SET OPTIONS" screen (FIG. 13), press the "SET AIM OK WINDOW" button, (Button 3).



SECTION TWO

The next screen (FIG. 14) displays functions which allow the changing of the horizontal window. Use the "INCREASE VALUE" or "DECREASE VALUE" buttons (Button 3 or Button 4) to change the value as desired. When the correct horizontal window value is displayed, press the "ENTER CURRENT VALUE" button, (Button 5), to continue.

This screen (FIG. 15) shows functions which allow the changing of the vertical window. Use the "INCREASE VALUE" or "DECREASE VALUE" buttons to change the value as desired. When the correct vertical window value is displayed, press the "ENTER CURRENT VALUE" button, (Button 5), to return to the SET OPTIONS screen.

2.6 CHOOSE AIMING METHOD

At the "SET OPTIONS" screen (FIG. 16), press "CHOOSE AIMING METHOD" button, (Button 4).

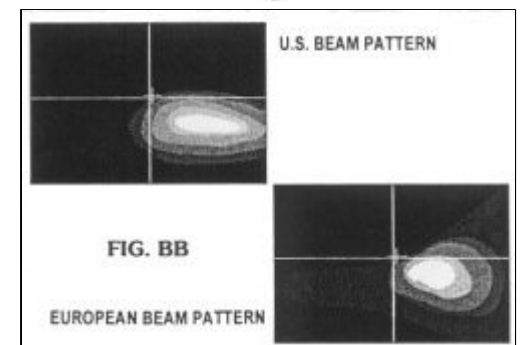
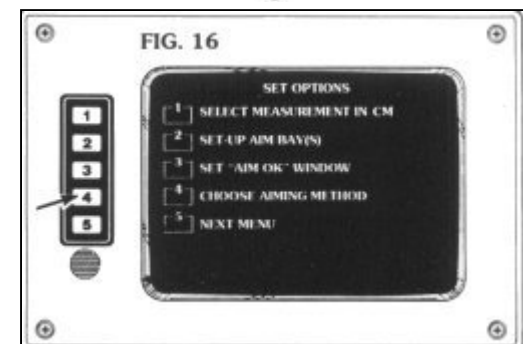
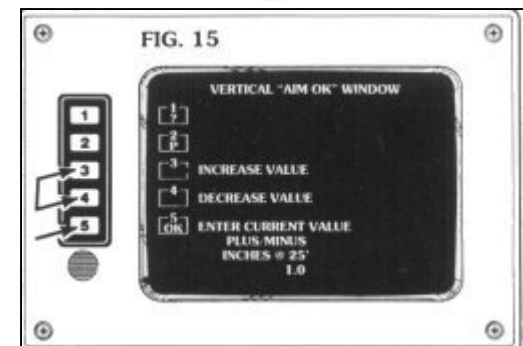
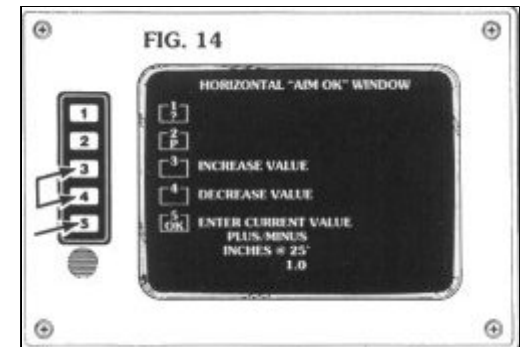
This screen displays the different aiming methods available to this Vision 1 unit. The two most common are:

2.6.1 U.S. LAMPS/FBA AIMING (Standard Module)

This is the method of aiming that uses the fractional gradients of two geometric points of the light beam to select the most appropriate aim point for that beam. This method is the preferred method of headlamp aiming, as recommended by Hopkins Manufacturing Corporation, and specified in Society of Automotive Engineers (SAE) Standard J579, DEC84.

2.6.2 EUROPEAN BEAM PATTERN LAMPS (Optical Module)

This method must be selected when aiming European beam pattern headlamps, which have a distinctly different beam pattern from U.S. headlamps. Note FIG. BB.



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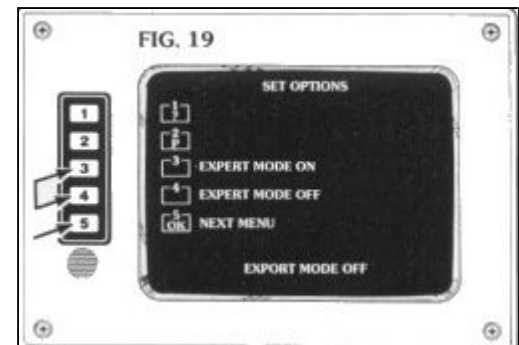
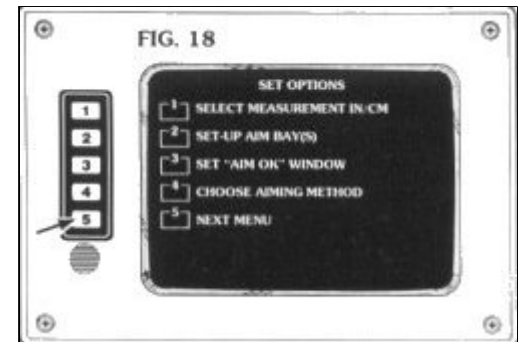
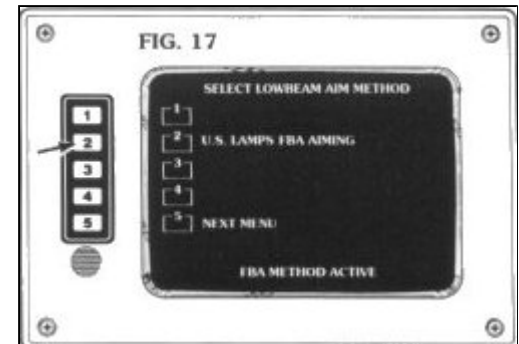
SECTION TWO

When the desired aiming method is displayed as active (FIG. 17), press the "NEXT MENU" button, (Button 5), to return to the SET OPTIONS screen.

2.7 EXPERT MODE

At the "SET OPTIONS" screen (FIG. 18), press "NEXT MENU" button, (Button 5).

This screen (FIG. 19) enables the operator to select expert mode off or on. When "EXPERT MODE ON" is selected, several explanatory screens in the aiming process are bypassed. This provides an experienced operator the benefit of a shortened aiming procedure. When "EXPERT MODE OFF" is selected, each step of the aiming process is explained with the monitor display. When the desired mode is displayed as active, press "NEXT MENU" button, (Button 5), to continue with the aimer preparation.



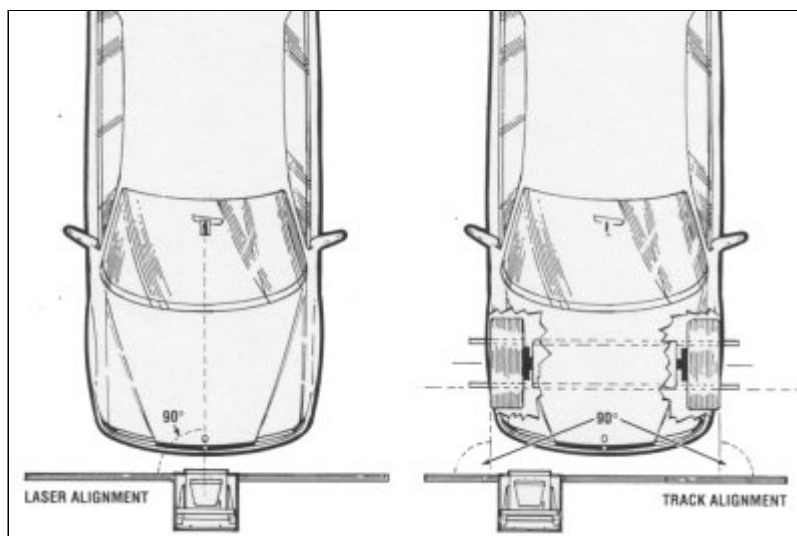
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SECTION TWO

2.8 AIMER ALIGNMENT METHOD

There are two recommended methods to ensure the Vision 1 aimer is aligned with the centerline of the vehicle. The LASER ALIGNMENT method utilizes the on-board laser to align the Vision 1 unit with the vehicle centerline; the TRACK ALIGNMENT method is for permanently installed applications where track attached to floor and the perpendicular alignment of the vehicle to the track is assured by the use of wheel stops and/or wheel guides.



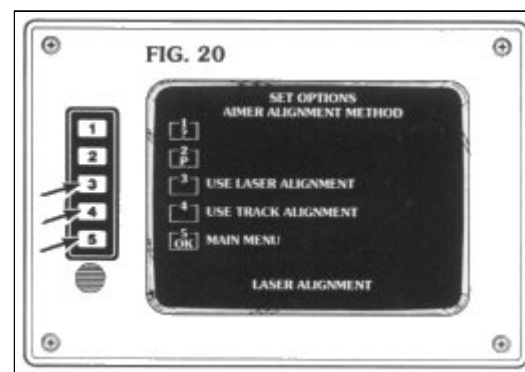
The next screen (FIG. 20) enables the operator to choose between the two aimer alignment methods (FIG. 21).

What follows are four (4) options for headlamp aiming. (You will need to choose one.):

- (A) Laser Alignment - Expert Mode Off
- (B) Track Alignment - Expert Mode Off
- (C) Laser Alignment - Expert Mode On
- (D) Track Alignment - Expert Mode On

When the desired method is displayed as active, press the "MAIN MENU" button, (Button 5), to save all of the entered values and return to the MAIN MENU.

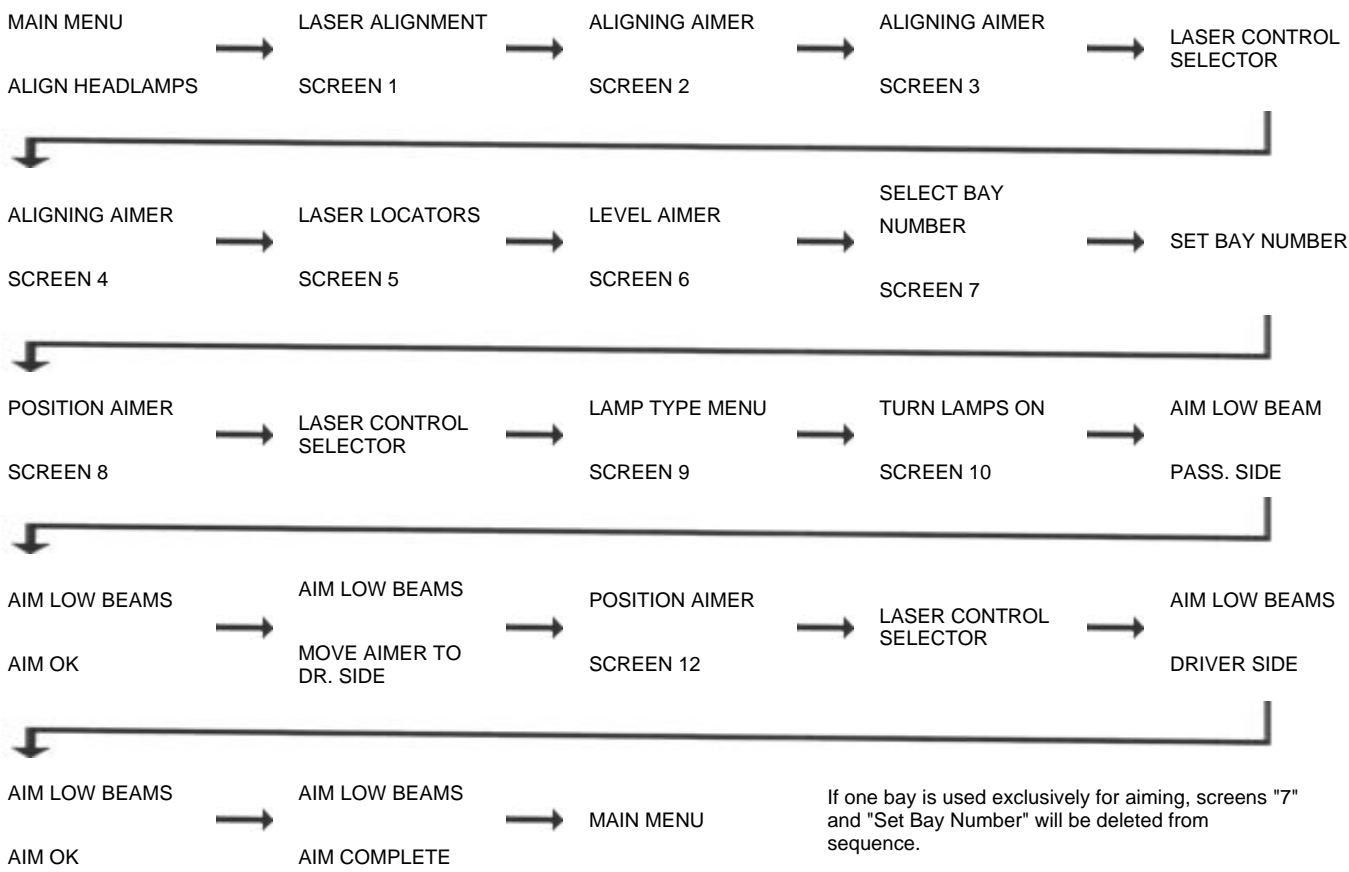
The Vision 1™ is now ready to aim headlamps.



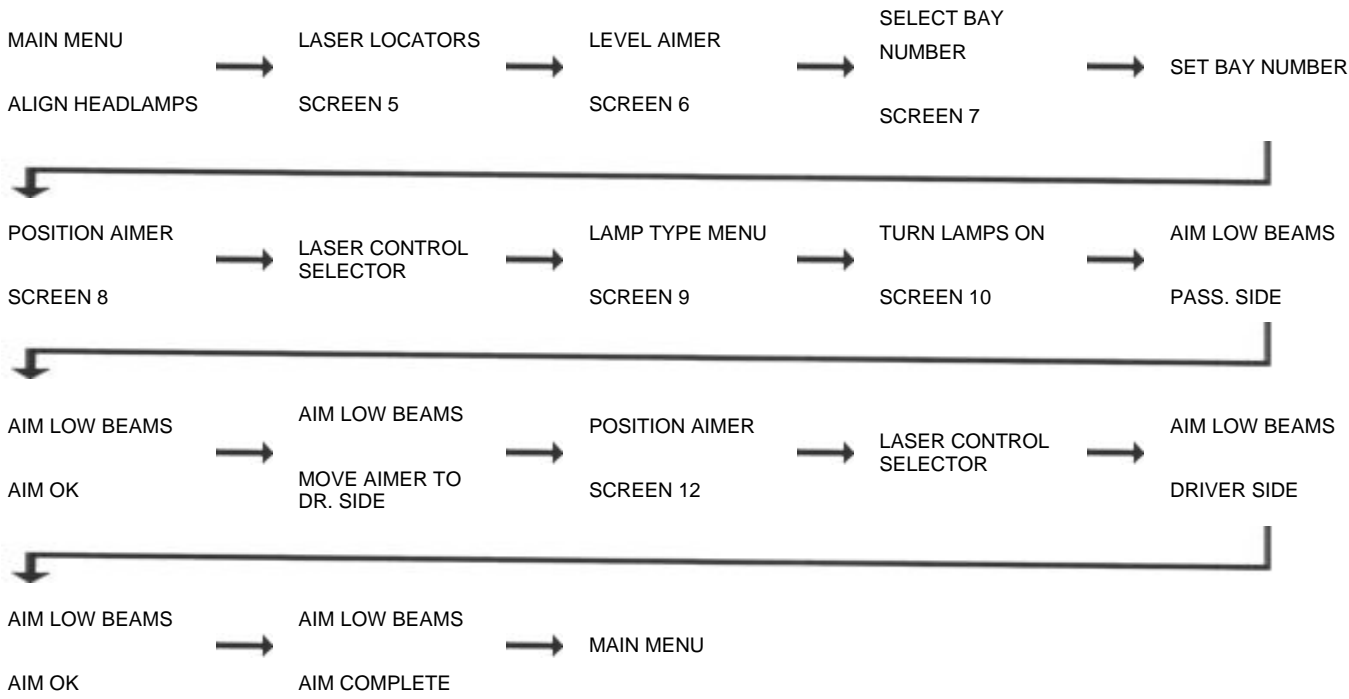
SECTION TWO

QUICK REFERENCE SEQUENCE GUIDE

LASER ALIGNMENT / EXPERT MODE OFF



TRACK ALIGNMENT / EXPERT MODE OFF



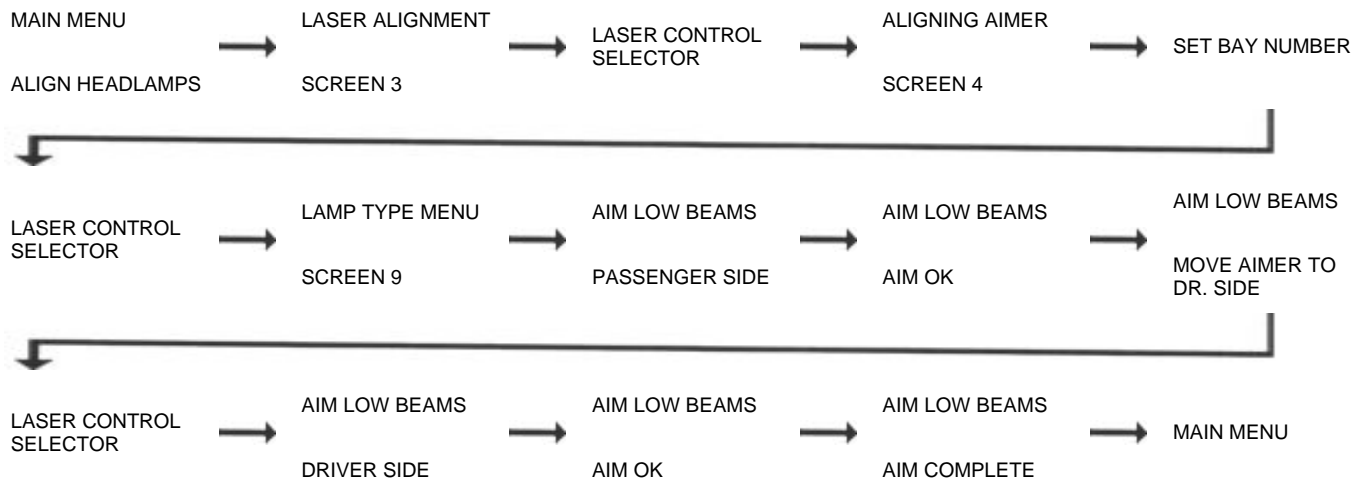
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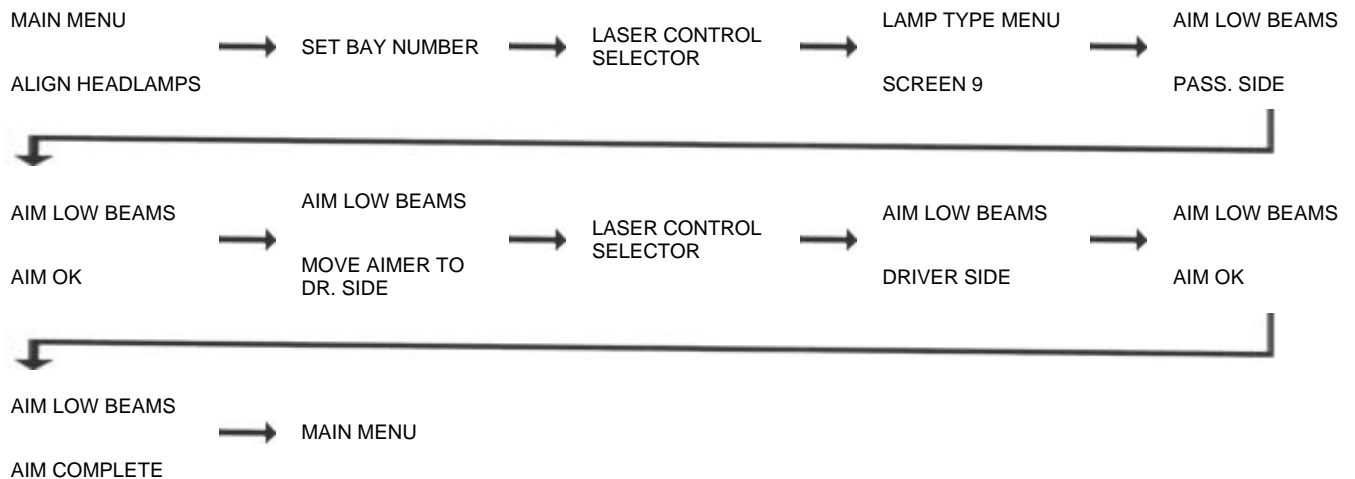
SECTION TWO

QUICK REFERENCE SEQUENCE GUIDE

LASER ALIGNMENT / EXPERT MODE ON



TRACK ALIGNMENT / EXPERT MODE ON



SECTION THREE / SECTION FOUR

3.1 AREA / VEHICLE SETUP

The aiming area floor should be relatively clean and dry with no unusually uneven areas which could affect the positioning of the vehicle or aimer.

Drive the vehicle to be checked into the aiming area, set the parking brake.

Vehicle preparation should include the following:

- * Remove ice or mud from under fenders.
- * See that no tire is noticeably deflated.
- * Check vehicle springs for sag or broken leaves.
- * See that there is no unusual load in the vehicle.
- * Check functioning of "level ride" control, if applicable.
- * Clean lamp lenses.
- * Check for bulb burn-out, proper beam switching, and moisture condensation inside headlamp assembly. If condensation is present, replace lamp assembly.
- * Stabilize suspension by rocking vehicle sideways.

Although the Vision 1 Aimer can "aim" the headlamps of a vehicle, with the motor idling, it is recommended that the engine be turned off during the aiming process. The vehicle headlamps must be on. Locate the horizontal and vertical adjustment screws. For some vehicles, the hood may need to be raised to access adjustment screws.

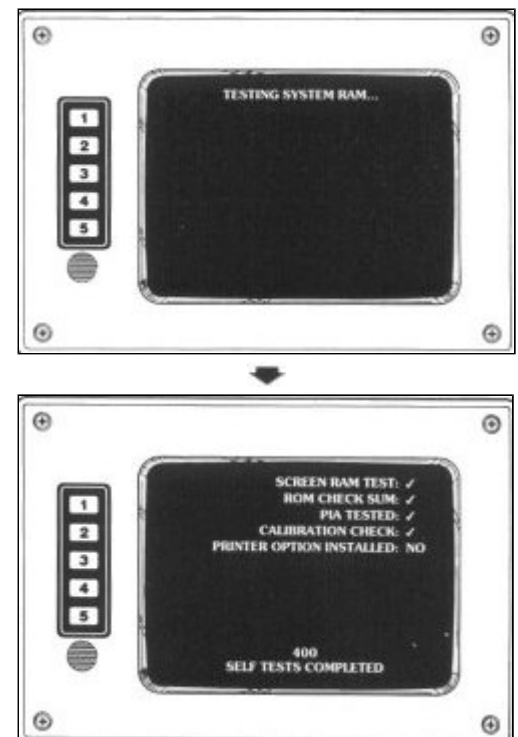
4.1 FEATURES

4.2 SELF TEST:

This feature is a diagnostic routine initiated by the computer at power up. The computer checks various operation functions, active memory, calibration, any installed options, and video system.

The Vision 1™ is designed so that once the factory calibration has been performed the unit cannot become "un-calibrated" unless the unit has sustained physical damage. The calibration is checked as part of the power-up self test.

If a calibration problem is noted, the monitor will display the error. Should the monitor display an error message upon start-up, reference the trouble-shooting guide, Section Seven. If corrective action does not rectify problem, contact a HOPPY® Customer Service representative at 1-800-390-7904 for corrective action.



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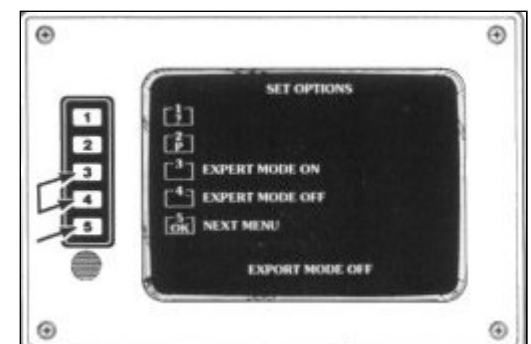
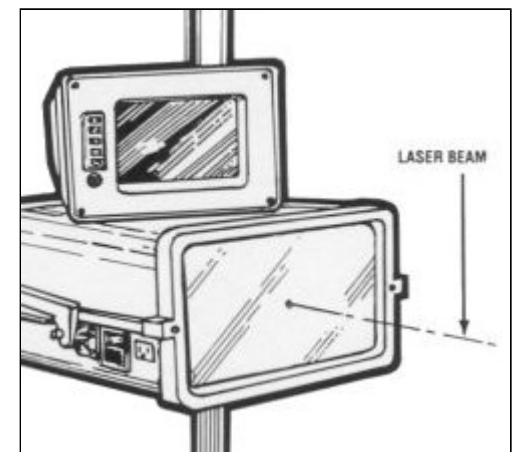
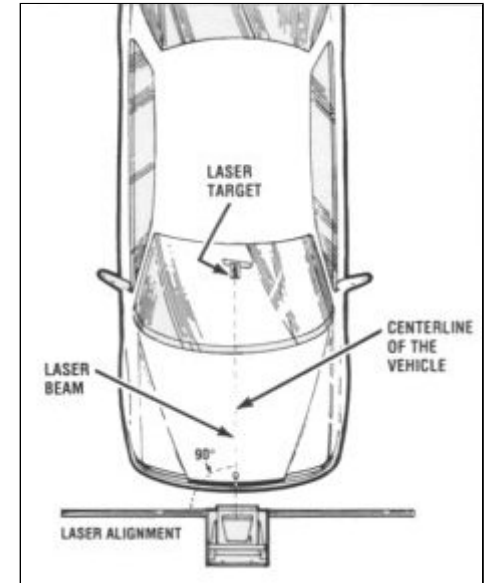
SECTION FOUR

4.3 ALIGNMENT LASER:

The alignment laser is mounted in the aimer head, and projects through the small hole in the center of the aimer lens. The laser is used to align the aimer with the centerline of the vehicle, and with the optical center of the headlamp. (Caution should always be exercised when laser is activated. Prolonged direct exposure to eyes could cause damage.)

4.4 EXPERT MODE:

When the "EXPERT MODE ON" is selected, the explanatory screens in the aiming process are bypassed. This provides the experienced operator the benefit of a shortened aiming procedure.



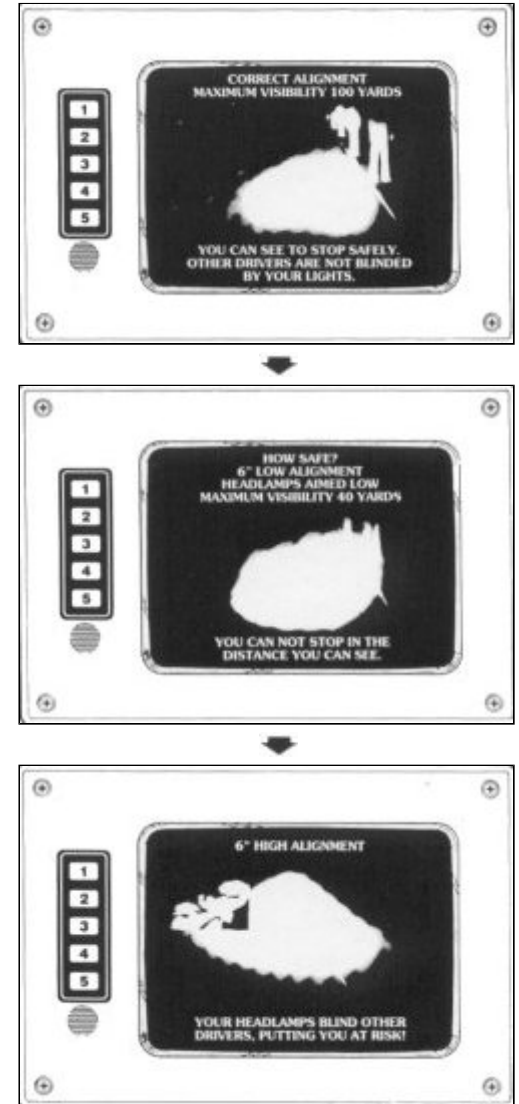
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SECTION FOUR

4.5 ALIGNMENT DEMO:

The main menu displays a function called "ALIGNMENT DEMO". This function displays a demonstration dramatizing the benefits of headlamps aimed correctly, aimed six inches low, and aimed six inches high.



4.6 AIMING MODULES

Contain the specific programs required to recognize and analyze headlamp alignment of U.S., European, and Japanese headlamp beam patterns. The Vision 1™ will not function without an aiming module properly installed.



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SECTION FOUR

4.7 PRINTER OPTION:

The optional Printer and Printer Module provides hard copy documentation of before aim measurements and after aim alignment verification.

4.8 SERIAL COMMUNICATION OPTION:

The Serial Communications Module option provides the capability to communicate with other compatible computer base programs for statistical analysis and record compilation. Serial Communication should be coordinated with Hopkins Engineers.

4.9 ALIGNMENT TRACK:

Provided with Vision 1™ to assure greater accuracy and repeatability. When placed under the front or rear wheels of aimer, the aimer will roll straight and true over dirt or cracks. The track can be permanently mounted in a designated aiming bay, where the perpendicular alignment of the vehicle to the track is assured by wheel stops and/or wheel guides affording headlamp alignment without the need to laser align aimer with vehicle.

4.10 CANDELA RATING:

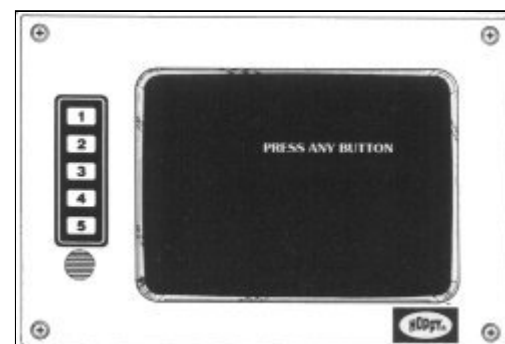
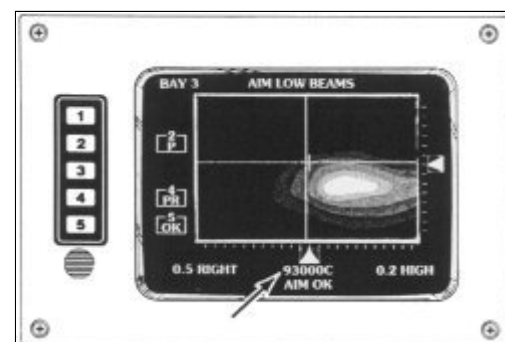
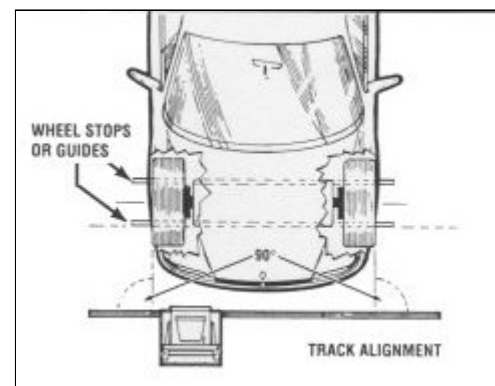
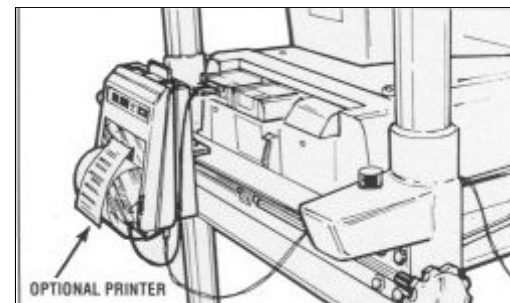
During the aim cycle, the Vision 1™ measures the approximate candela, (brightness), of the lamp. The measurement is displayed on the bottom of the aim screens.

4.11 SCREEN SAVER:

This feature protects the monitor from damage due to continuous image display on the screen. After 5 minutes of inactivity to the computer from the keyboard, the monitor will display the message "PRESS ANY BUTTON". This message will move about on the display screen. To return to the prior display, press any button.

4.12 REPLACEMENT PARTS:

In the event of an equipment malfunction, contact a HOPPY® Customer Service Representative at 1-800-390-7904 for a complete replacement parts listing.



SECTION FIVE

5.1 HEADLAMP AIMING PROCEDURE

5.2 LASER ALIGNMENT - "EXPERT MODE OFF"

From the Main Menu (FIG. 1), press the "ALIGN HEADLAMPS" button, (Button 2). The aimer will display (FIG. 2):

LASER ALIGNMENT

SCREEN 1:
THE VISION 1 IMAGE PROCESSOR WILL PROVIDE THE MOST ACCURATE HEADLAMP AIM MEASUREMENT OBTAINABLE. THE FOLLOWING STEPS ARE FUNDAMENTAL TO THE ALIGNMENT OF THE AIMER.

NEXT SCREEN...

Press the "NEXT SCREEN" button, (Button 5). The aimer will display (FIG. 3):

5.2.1 ALIGNING AIMER

SCREEN 2:
ROLL THE AIMER IN FRONT OF THE VEHICLE, SO THE POSITION OF THE AIMER IS APPROX. 20 INCHES (51 CM) FROM THE FACE OF THE HEADLAMPS. IF THE FLOOR AREA HAS CRACKS, A CHIPPED SURFACE OR IS ABNORMALLY DIRTY, THE FLOOR TRACK IS REQUIRED FOR ACCURACY.

NEXT SCREEN...

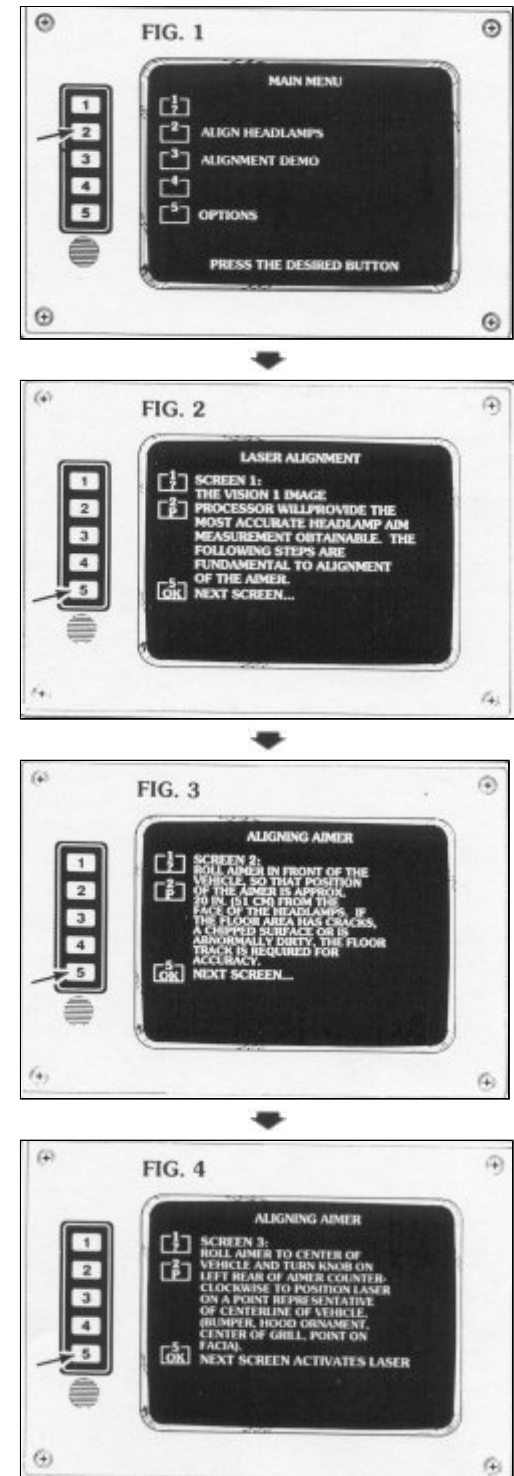
Press the "NEXT SCREEN" button, (Button 5). The aimer will display (FIG. 4):

ALIGNING AIMER

SCREEN 3:
ROLL THE AIMER TO THE CENTER OF VEHICLE AND TURN KNOB ON LEFT REAR OF AIMER COUNTERCLOCKWISE TO POSITION LASER ON A POINT REPRESENTATIVE OF CENTERLINE OF VEHICLE (BUMPER, HOOD ORNAMENT, CENTER OF GRILL, POINT ON FACIA).

NEXT SCREEN ACTIVATES LASER

Press the "NEXT SCREEN ACTIVATES LASER" button, (Button 5). The aimer will display (FIG. 5):



SECTION FIVE

5.2.2 LASER CONTROL SELECTOR

PREVIOUS STEP

TURN ON LASER

TURN OFF LASER

NEXT STEP

This control screen (FIG. 5) allows the operator to turn on the alignment laser to perform the tasks described in Screens 3 (FIG. 4) and 4 (FIG. 6). When the alignment laser is energized the aimer will continue to beep, and display the message "CAUTION LASER ACTIVE" at the bottom of the monitor screen.

Press the "NEXT STEP" button, (Button 5). The aimer will display (FIG. 6):

ALIGNING AIMER

SCREEN 4:
TURN KNOB ON LEFT REAR OF AIMER CLOCKWISE TO POSITION LASER ON A CENTERLINE POINT OF VEHICLE AT WINDSHIELD. ADJUST AIMER BASE SO THAT WHEN LASER IS MOVED FROM UP TO DOWN POSITION, THE LASER WILL INTERSECT THE 2 CENTER POINTS SELECTED AS REPRESENTATIVE OF CENTERLINE.

NEXT SCREEN...

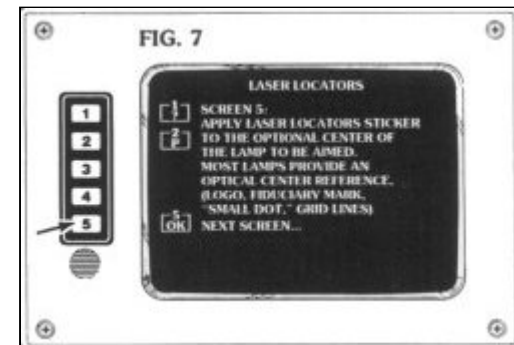
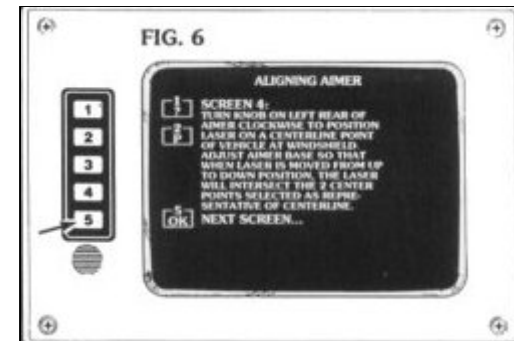
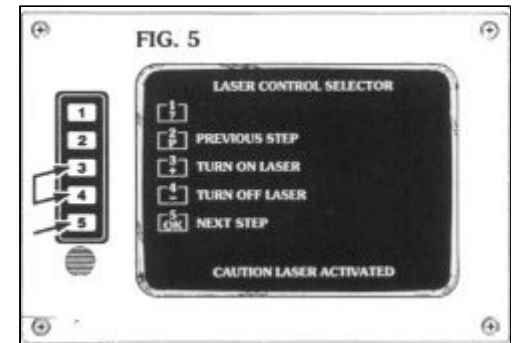
Press the "NEXT SCREEN" button, (Button 5). The alignment laser will automatically be de-energized and aimer will display (FIG. 7):

5.2.3 LASER LOCATORS (TARGETS)

SCREEN 5:
APPLY LASER LOCATOR STICKER TO THE OPTICAL CENTER OF THE LAMP TO BE AIMED. MOST LAMPS PROVIDE AN OPTICAL CENTER REFERENCE, (LOGO, FIDUCIARY MARK, "SMALL DOT", GRID LINES)

NEXT SCREEN...

Press the "NEXT SCREEN" button, (Button 5). The aimer will display (FIG. 8):



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SECTION FIVE

5.2.4 LEVEL AIMER

SCREEN 6:

CHECK LEVEL VIAL ON TOP OF AIMER HEAD TO ASSURE AIMER IS LEVEL. TO ADJUST, TURN KNOB ON LEFT OF AIMER CLOCKWISE TO COUNTERCLOCKWISE TO MOVE LEVEL BUBBLE TO CENTER.

NEXT SCREEN...

Press the "NEXT SCREEN" button, (Button 5). The aimer will display (FIG. 9):

5.2.5 SELECT BAY NUMBER

SCREEN 7:

SELECT THE BAY NUMBER WHICH ALIGNMENT IS TO BE PERFORMED. IF AN INCORRECT BAY NUMBER IS SELECTED, THE HEADLAMP ALIGNMENT WILL REFLECT AN INCORRECT FLOOR SLOPE, RESULTING IN MISALIGNMENT.

NEXT SCREEN...

Press the "NEXT SCREEN" button, (Button 5). The aimer will display (FIG. 10):

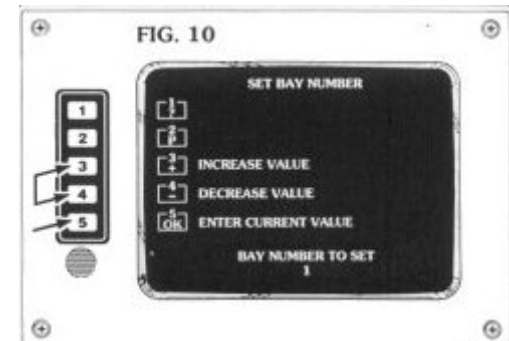
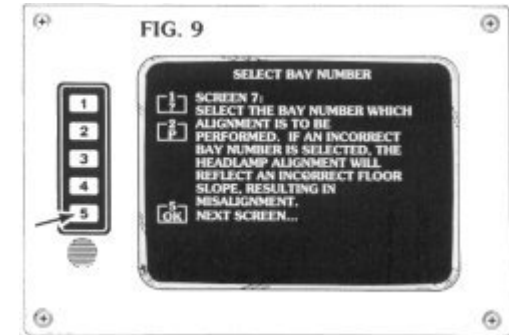
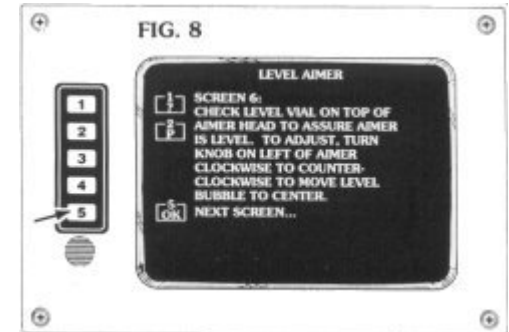
SET BAY NUMBER

INCREASE VALUE
DECREASE VALUE
ENTER CURRENT VALUE

BAY NUMBER TO SET

1

The number displayed at the bottom of the screen is the active bay. To change to a different aiming bay, press the "INCREASE VALUE" button, (Button 3), or the "DECREASE VALUE" button, (Button 4), until the desired aiming bay number is displayed. When the desired aiming bay number is displayed, press the "ENTER CURRENT VALUE" button, (Button 5). The aimer will display (FIG. 11):



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SECTION FIVE

5.2.6 POSITION AIMER

SCREEN 8:

ROLL AIMER TO PASSENGER SIDE OF VEHICLE AND RAISE OR LOWER AIMER HEAD TO POSITION LASER AT OPTICAL CENTER OF HEADLAMP TO BE AIMED.

NEXT SCREEN ACTIVATES LASER

Press the "NEXT SCREEN ACTIVATES LASER" button, (Button 5). The aimer will display (FIG. 12):

LASER CONTROL SELECTOR

PREVIOUS STEP

TURN ON LASER

TURN OFF LASER

NEXT STEP

This control screen (FIG. 12) allows the operator to turn on the alignment laser to perform the tasks described in Screen 8. When the alignment laser is energized the aimer will continue to beep, and display the message "CAUTION LASER ACTIVE" at the bottom of the monitor screen.

Press the "NEXT STEP" button, (Button 5). The alignment laser will automatically be de-energized and aimer will display (FIG. 13):

5.2.7 LAMP TYPE MENU

SCREEN 9:

FOG/AUX LAMPS

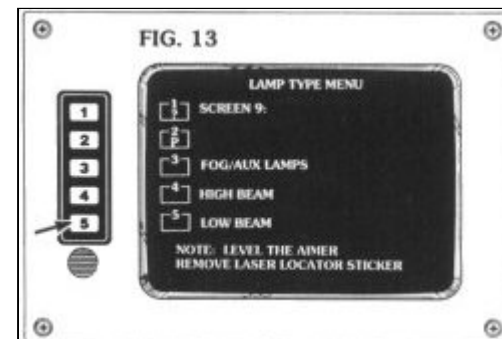
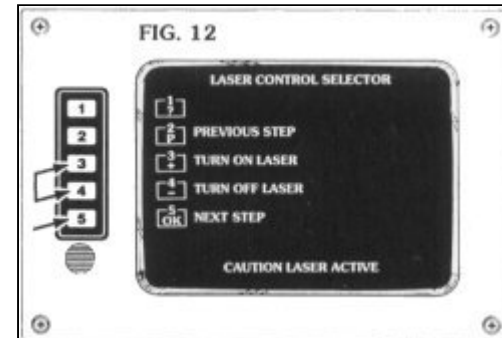
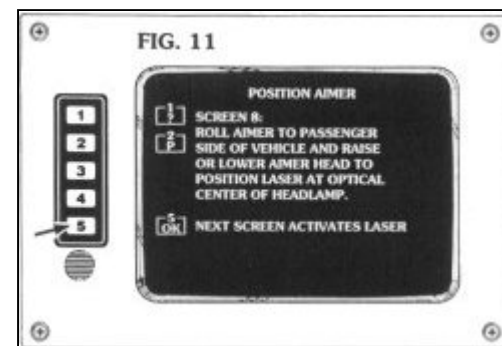
HIGH BEAM

LOW BEAM

NOTE: LEVEL THE AIMER

REMOVE LASER LOCATOR STICKER

This screen (FIG. 13) allows the operator to select the type of lamp to be aimed. Make a selection by pressing the appropriate button. Make necessary adjustments to assure aimer is level. The aimer will then display (FIG. 14):



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SECTION FIVE

TURN LAMPS ON

SCREEN 10:

IF LAMPS ARE A COMBINATION LOW/HIGH BEAM, AIM ONLY LOW BEAM. IF THE SYSTEM IS A 4 LAMP SYSTEM, AIM BOTH LOW BEAMS FIRST, THEN BOTH HIGH BEAMS.

CHECK THAT AIMER IS POSITIONED AT OPTICAL CENTER OF LAMP.

NEXT SCREEN/AIM HEADLAMPS

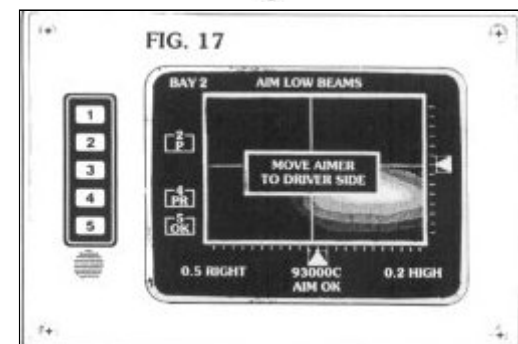
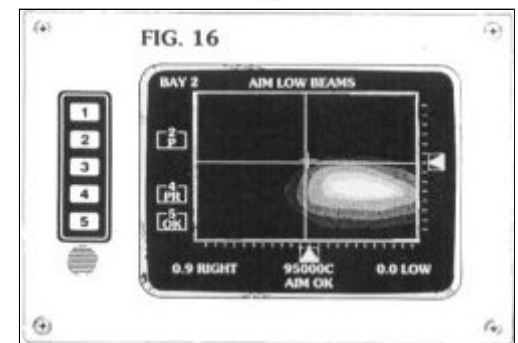
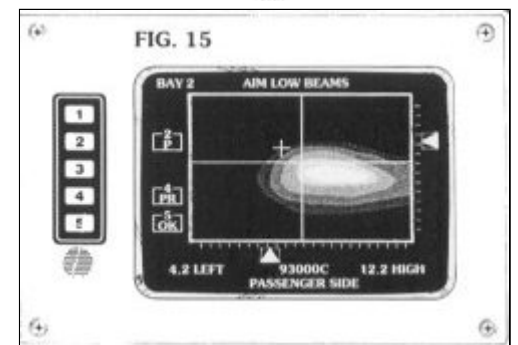
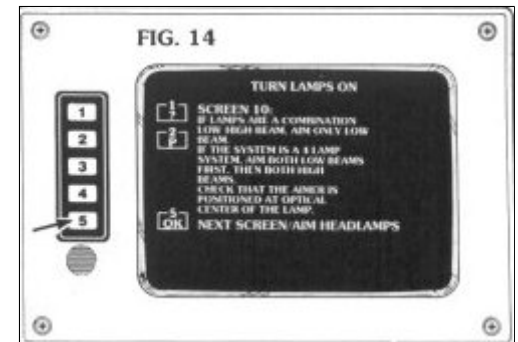
Press the "NEXT SCREEN/AIM HEADLAMPS" button, (Button 5). The aimer will display the aiming screen (FIG. 15).

The selected lamp type is displayed across the top of the aim screen (FIG. 15). In the upper left hand corner the bay number is displayed. At the bottom of the aim screen, the measurement of the aim-point and the approximate candela (brightness) value is displayed. On the bottom line of the monitor, the aimer displays "PASSENGER SIDE", indicating the aimer is aiming the passenger side lamp.

Press the "PR" (PRINT) button, (Button 4). The operator can generate a printout of the current aim information, if the printer option is installed.

Press the "OK" button, (Button 5). The aiming cycle for the lamp is ended (FIG. 16), and the aimer displays instructions to move the aimer to the driver side lamps (FIG. 17).

Press the "OK" button, (Button 5), a second time. The aimer will display (FIG. 18):



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SECTION FIVE

POSITION AIMER

SCREEN 12:

ROLL AIMER TO DRIVERS SIDE OF VEHICLE AND RAISE OR LOWER AIMER HEAD TO POSITION LASER AT OPTICAL CENTER OF LAMP TO BE AIMED.

CHECK IF AIMER IS LEVEL.

NEXT SCREEN ACTIVATES LASER

Press the "NEXT SCREEN ACTIVATES LASER" button, (Button 5). The aimer will display (FIG. 19):

LASER CONTROL SELECTOR

PREVIOUS STEP

TURN ON LASER

TURN OFF LASER

NEXT STEP

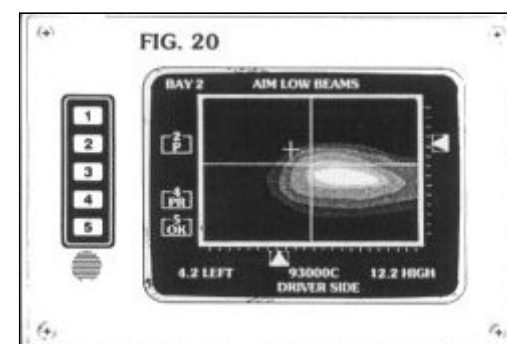
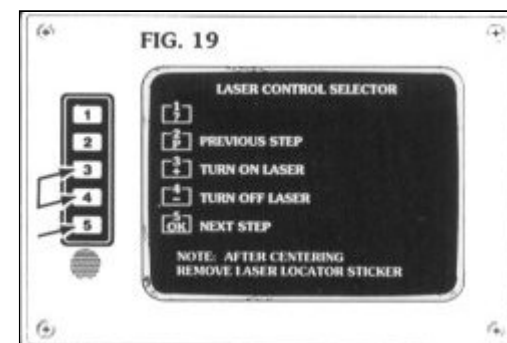
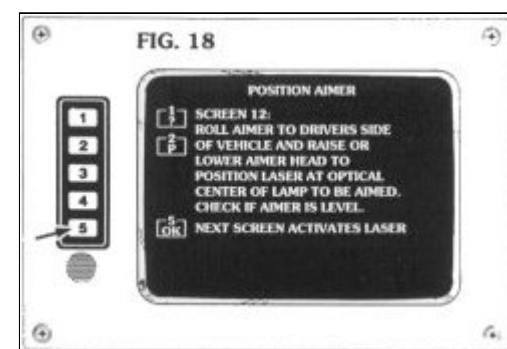
AFTER CENTERING, REMOVE LASER LOCATOR STICKER

This control screen (FIG. 19) allows the operator to turn on the alignment laser to perform the tasks described in Screen 12 (FIG. 18). When the alignment laser is energized the aimer will continue to beep, and display the message "CAUTION LASER ACTIVE" at the bottom of the monitor screen.

Press the "NEXT STEP" button, (Button 5). The aimer will display the aiming screen (FIG. 20).

The selected lamp type is displayed across the top of the aim screen. At the upper left hand corner the bay number is displayed. Next to the bottom of the aim screen the measurement of the aim-point and the approximate candela (brightness) value is displayed. On the bottom line of the monitor, the aimer displays "DRIVER SIDE", indicating the aimer is aiming the driver side lamp.

Press the "PR" (PRINT) button, (Button 4), the operator can generate a printout of the current aim information, if the printer option is installed.

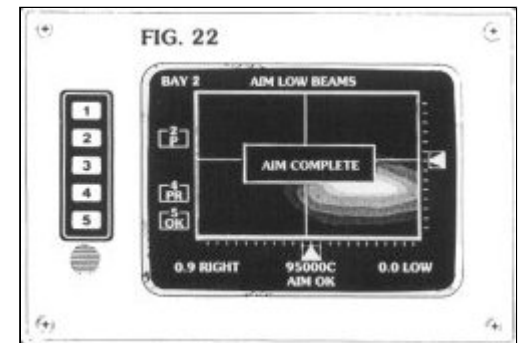
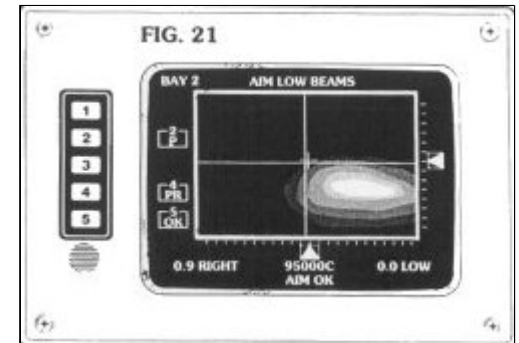


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SECTION FIVE

Press the "OK" button, (Button 5), a second time, the aiming cycle for that lamp is completed (FIG. 21), and the aimer displays "AIM COMPLETE" (FIG. 22) and returns to the Main Menu.



5.3 TRACK ALIGNMENT - "EXPERT MODE OFF"

From the Main Menu (FIG. 1), press the "ALIGN HEADLAMPS" button, (Button 2). The aimer will display (FIG. 2):

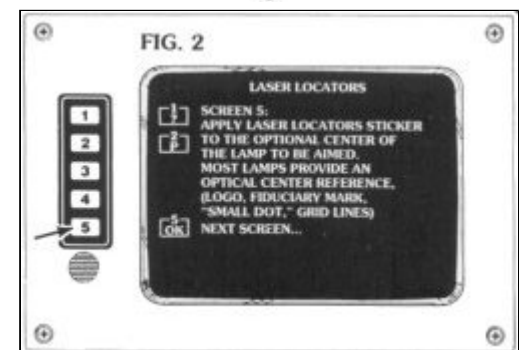
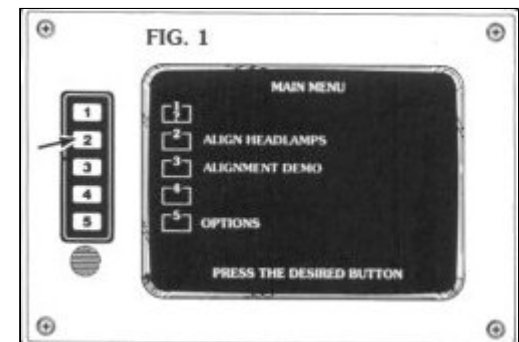
5.3.1 LASER LOCATORS

SCREEN 5:

APPLY LASER LOCATOR STICKER TO THE OPTICAL CENTERS OF THE LAMPS TO BE AIMED. MOST LAMPS PROVIDE AN OPTICAL CENTER REFERENCE, (LOGO, FIDUCIARY MARK "SMALL DOT", GRID LINES).

NEXT SCREEN...

Press the "NEXT SCREEN" button, (Button 5). The aimer will display (FIG. 3):



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SECTION FIVE

5.3.2 LEVEL AIMER

SCREEN 6:
CHECK LEVEL VIAL ON TOP OF AIMER HEAD TO ASSURE AIMER IS LEVEL. TO ADJUST, TURN KNOB ON LEFT OF AIMER CLOCKWISE TO COUNTERCLOCKWISE TO MOVE LEVEL BUBBLE TO CENTER.

NEXT SCREEN...

Press the "NEXT SCREEN" button, (Button 5). The aimer will display (FIG. 4):

5.3.3 SELECT BAY NUMBER

SCREEN 7:
SELECT THE BAY NUMBER WHICH ALIGNMENT IS TO BE PERFORMED. IF AN INCORRECT BAY NUMBER IS SELECTED, THE HEADLAMP ALIGNMENT WILL REFLECT AN INCORRECT FLOOR SLOPE, RESULTING IN MISALIGNMENT.

NEXT SCREEN...

Press the "NEXT SCREEN" button, (Button 5). The aimer will display (FIG. 5):

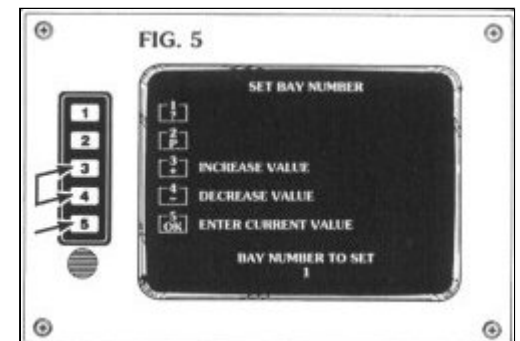
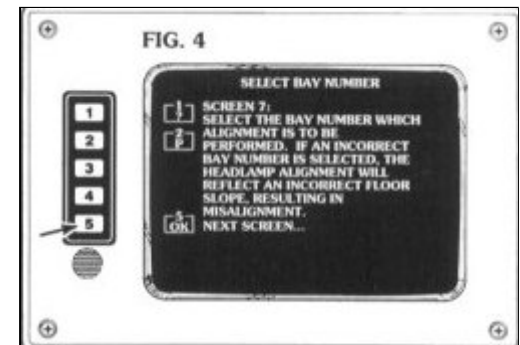
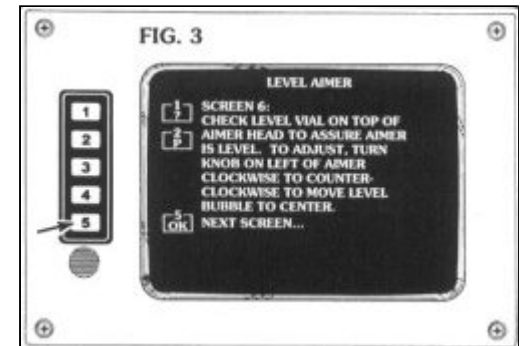
SET BAY NUMBER

INCREASE VALUE
DECREASE VALUE
ENTER CURRENT VALUE

BAY NUMBER TO SET

1

The number displayed at the bottom of the screen (FIG. 5) is the active bay. To change to a different aiming bay, press the "INCREASE VALUE" button, (Button 3), or the "DECREASE VALUE" button, (Button 4), until the desired aiming bay number is displayed. When the desired aiming bay number is displayed, press the "ENTER CURRENT VALUE" button, (Button 5). The aimer will display (FIG. 6):



SECTION FIVE

5.3.4 POSITION AIMER

SCREEN 8:

ROLL AIMER TO PASSENGER SIDE OF VEHICLE AND RAISE OR LOWER AIMER HEAD TO POSITION LASER AT OPTICAL CENTER OF LAMP TO BE AIMED.

NEXT SCREEN ACTIVATES LASER

Press the "NEXT SCREEN ACTIVATES LASER" button, (Button 5). The aimer will display (FIG. 7):

5.3.5 LASER CONTROL SELECTOR

PREVIOUS STEP

TURN ON LASER

TURN OFF LASER

NEXT STEP

This control screen allows the operator to turn on the alignment laser to perform the tasks described in Screen 8 (FIG. 6). When the alignment laser is energized the aimer will continue to beep, and display the message "CAUTION LASER ACTIVE" at the bottom of the monitor screen.

Press the "NEXT STEP" button, (Button 5). The alignment laser will automatically be de-energized and the aimer will display the following screen (FIG. 9):

5.3.6 LAMP TYPE MENU

SCREEN 9:

FOG/AUX LAMPS

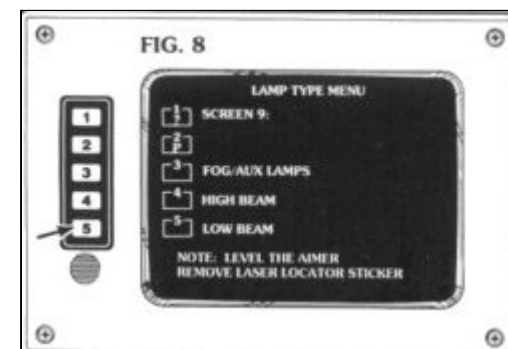
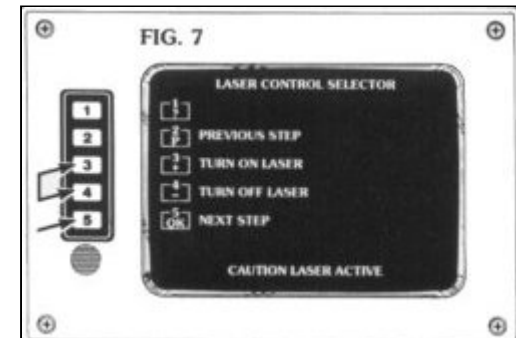
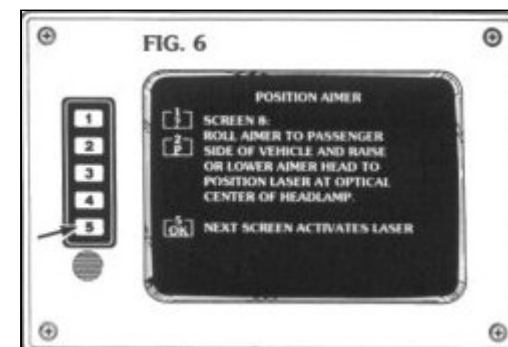
HIGH BEAM

LOW BEAM

NOTE: LEVEL THE AIMER

REMOVE LASER LOCATOR STICKER

This screen allows the operator to select the type of lamp to be aimed. Make a selection by pressing the appropriate button. Make necessary adjustments to assure aimer is level. The aimer will then display (FIG. 9):



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SECTION FIVE

TURN LAMPS ON

SCREEN 10:

IF LAMPS ARE A COMBINATION LOW/HIGH BEAM, AIM ONLY TO LOW BEAM. IF THE SYSTEM IS A 4 LAMP SYSTEM, AIM BOTH LOW BEAMS FIRST, THEN BOTH HIM BEAMS. CHECK THAT AIMER IS POSITIONED AT OPTICAL CENTER OF LAMP.

NEXT SCREEN/AIM HEADLAMPS

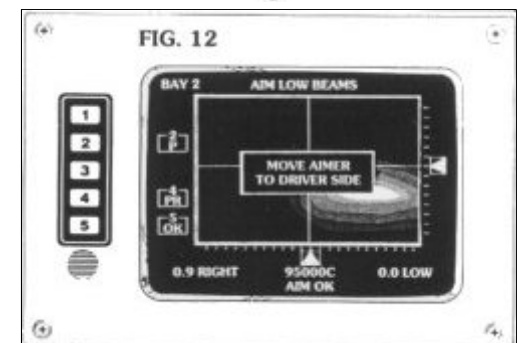
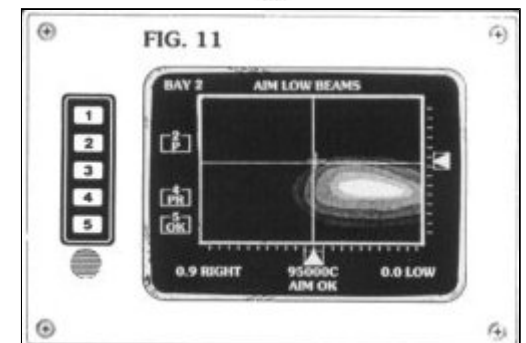
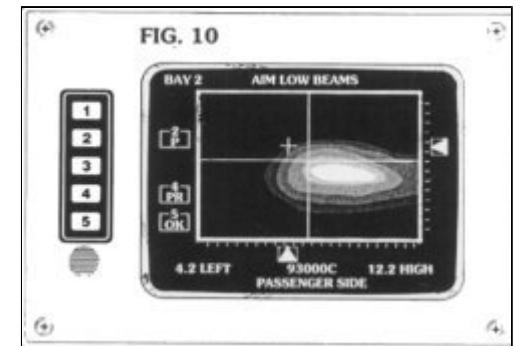
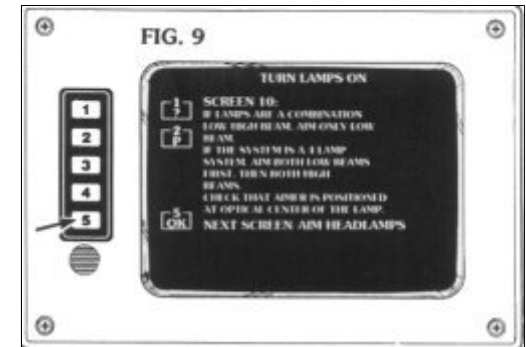
Press the "NEXT SCREEN/AIM HEADLAMPS" button, (Button 5). The aimer will display the aiming screen (FIG. 10).

The selected lamp type is displayed across the top of the aim screen. At the upper left hand corner the bay number is displayed. Next to the bottom of the aim screen the measurement of the aim-point and the approximate candela (brightness) value is displayed. On the bottom line of the monitor, the aimer displays "PASSENGER SIDE" (FIG. 10), indicating the aimer is aiming the passenger side lamp.

Press the "PR" (PRINT) button, (Button 4). The operator can generate a printout of the current aim information, if the printer option is installed.

Press the "OK" button, (Button 5). The aiming cycle for that lamp is completed (FIG. 11) and the aimer displays instructions to move the aimer to the driver side lamp (FIG. 12).

Press the "OK" button, (Button 5), a second time. The aimer will display (FIG. 13):



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SECTION FIVE

POSITION AIMER

SCREEN 12:

ROLL AIMER TO DRIVERS SIDE OF VEHICLE AND RAISE OR LOWER AIMER HEAD TO POSITION LASER AT OPTICAL CENTER OF LAMP TO BE AIMED.

CHECK IF AIMER IS LEVEL.

NEXT SCREEN ACTIVATES LASER

Press the "NEXT SCREEN ACTIVATES LASER" button, (Button 5). The aimer will display (FIG. 14):

LASER CONTROL SELECTOR

PREVIOUS STEP

TURN ON LASER

TURN OFF LASER

NEXT STEP

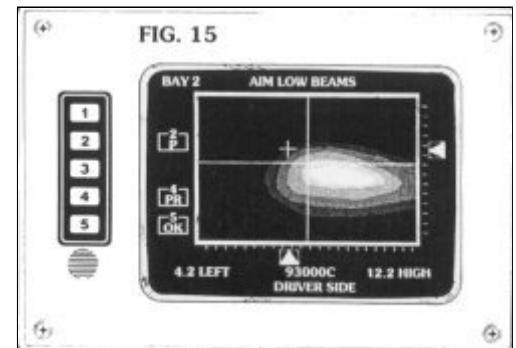
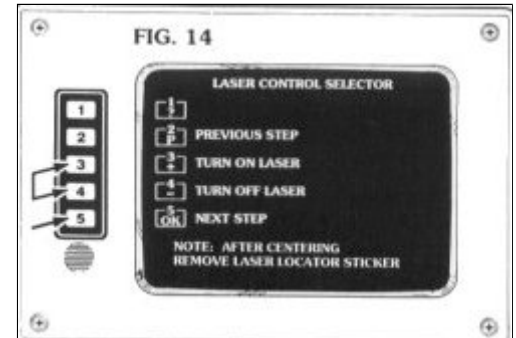
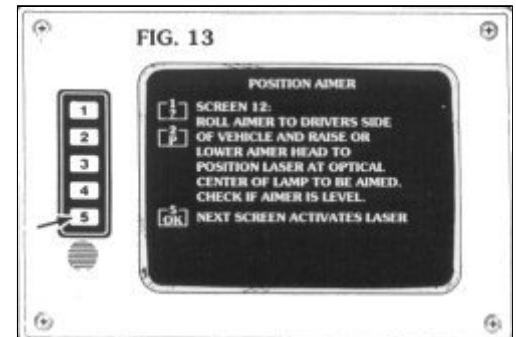
AFTER CENTERING, REMOVE LASER LOCATORS

This control screen allows the operator to turn on the alignment laser to perform the tasks described in Screen 12. When the alignment laser is energized the aimer will continue to beep, and display the message "CAUTION LASER ACTIVE" at the bottom of the monitor screen.

Press the "NEXT STEP" button, (Button 5). The aimer will display the aiming screen (FIG. 15).

The selected lamp type is displayed across the top of the aim screen. At the upper left hand corner the bay number is displayed. Next to the bottom of the aim screen the measurement of the aim-point and the approximate candela (brightness) value is displayed. On the bottom line of the monitor, the aimer displays "DRIVER SIDE" (FIG. 16), indicating the aimer is aiming the driver side lamp.

Press the "PR" (PRINT) button, (Button 4). The operator can generate a printout of the current aim information, if the printer option is installed.

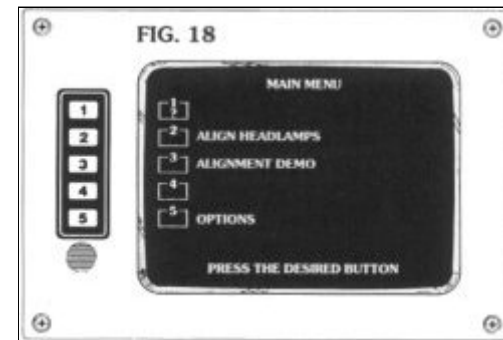
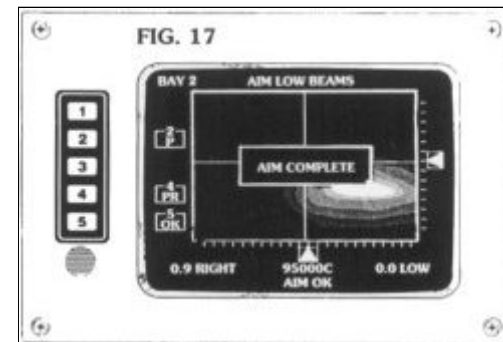
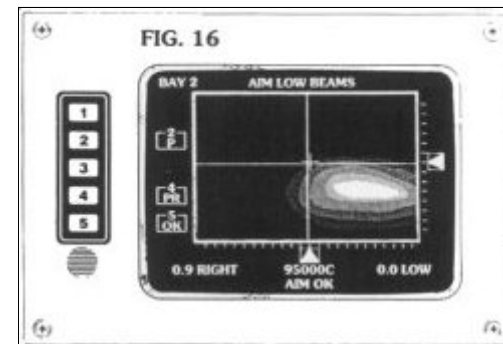


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SECTION FIVE

Press the "OK" button, (Button 5), a second time. The aiming cycle for the lamp is completed (FIG. 16), and the aimer displays "AIM COMPLETE" (FIG. 17) and returns to the Main Menu (FIG. 18).



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5.4 LASER ALIGNMENT - "EXPERT MODE ON"

From the Main Menu (FIG. 1), press the "ALIGN HEADLAMPS" button, (Button 2). The aimer will display (FIG. 2):

5.4.1 ALIGNING AIMER

SCREEN 3:

ROLL THE AIMER TO THE CENTER OF VEHICLE AND TURN KNOB ON LEFT REAR OF AIMER COUNTERCLOCKWISE TO POSITION LASER ON A POINT REPRESENTATIVE OF CENTERLINE OF VEHICLE (BUMPER, HOOD ORNAMENT, CENTER OF GRILL, POINT OF FACIA).

NEXT SCREEN ACTIVATES LASER

Press the "NEXT SCREEN ACTIVATES LASER" button, (Button 5). The aimer will display (FIG. 3):

5.4.2 LASER CONTROL SELECTOR

PREVIOUS STEP

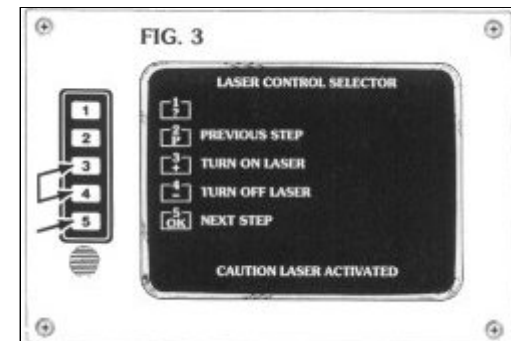
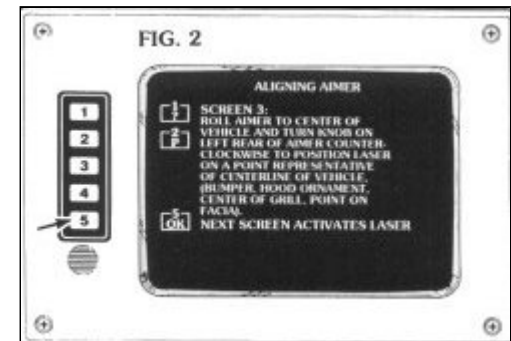
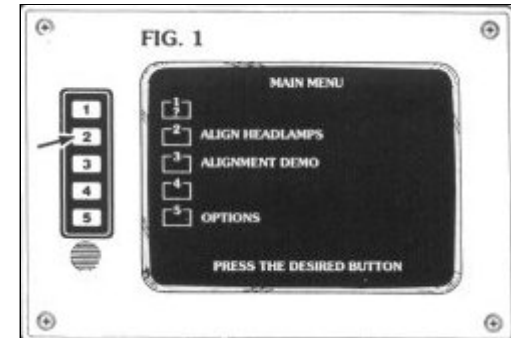
TURN ON LASER

TURN OFF LASER

NEXT STEP

This control screen (FIG. 3) allows the operator to turn on the alignment laser to perform the tasks described in Screens 3 (FIG. 2) and 4 (FIG. 4). When the alignment laser is energized the aimer will continue to beep, and display the message "CAUTION LASER ACTIVE" at the bottom of the monitor screen.

Press the "NEXT STEP" button, (Button 5). The aimer will display (FIG. 4):



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ALIGNING AIMER

SCREEN 4:

TURN KNOB ON LEFT REAR OF AIMER CLOCKWISE TO POSITION LASER ON A CENTERLINE POINT OF VEHICLE AT WINDSHIELD. ADJUST AIMER BASE SO THAT WHEN LASER IS MOVED FROM UP TO DOWN POSITION, THE LASER WILL INTERSECT THE 2 CENTERPOINTS SELECTED AS REPRESENTATIVE OF CENTERLINE.

NEXT SCREEN...

Press the "NEXT SCREEN" button, (Button 5). The alignment laser will automatically be de-energized and aimer will display (FIG. 5):

5.4.3 SET BAY NUMBER

INCREASE VALUE

DECREASE VALUE

ENTER CURRENT VALUE

BAY NUMBER TO SET

1

The number displayed at the bottom of the screen (FIG. 5) is the active bay. To change to a different aiming bay, press the "INCREASE VALUE" button, (Button 3), or the "DECREASE VALUE" button, (Button 4), until the desired aiming bay number is displayed. When the desired aiming bay number is displayed, press the "ENTER CURRENT VALUE" button, (Button 5), the aimer will display (FIG. 6):

LASER CONTROL SELECTOR

PREVIOUS STEP

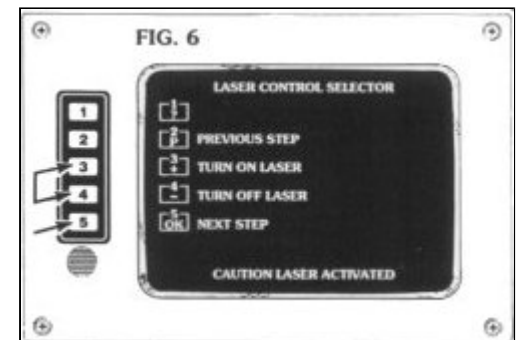
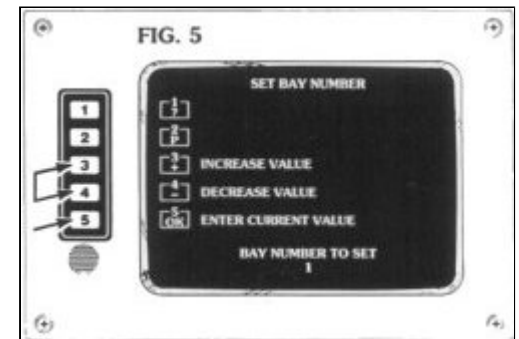
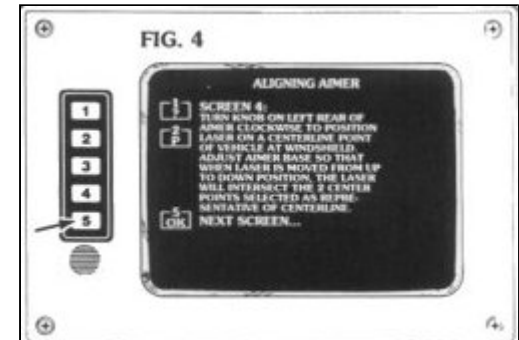
TURN ON LASER

TURN OFF LASER

NEXT STEP

This control screen (FIG. 6) allows the operator to turn on the alignment laser to use as a guide when aligning the aimer head to the optical center of the passenger side headlamp. When the alignment laser is energized the aimer will continue to beep, and display the message "CAUTION LASER ACTIVE" at the bottom of the monitor screen.

Press the "NEXT STEP" button, (Button 5). The alignment laser will automatically be de-energized and the aimer will display (FIG. 7):



SECTION FIVE

5.4.4 LAMP TYPE MENU

SCREEN 9:

FOG/AUX LAMPS
HIGH BEAM
LOW BEAM

NOTE: LEVEL THE AIMER
REMOVE LASER LOCATOR STICKERS

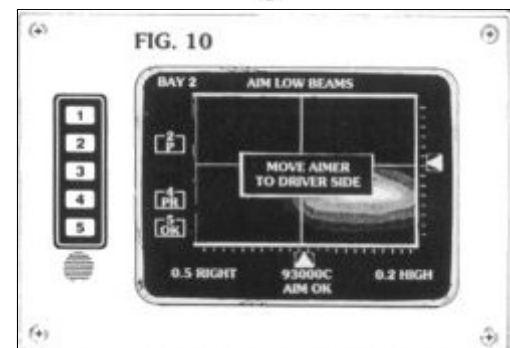
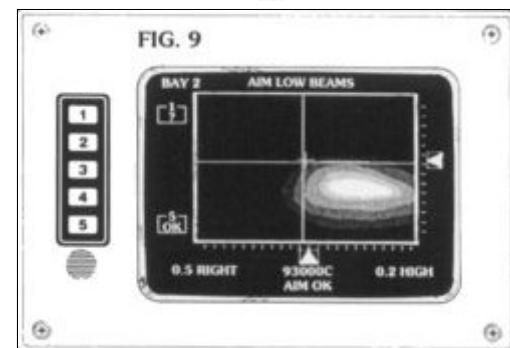
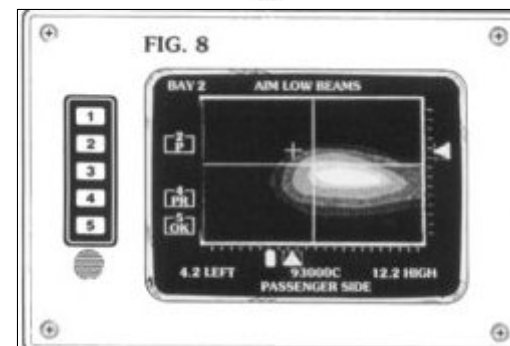
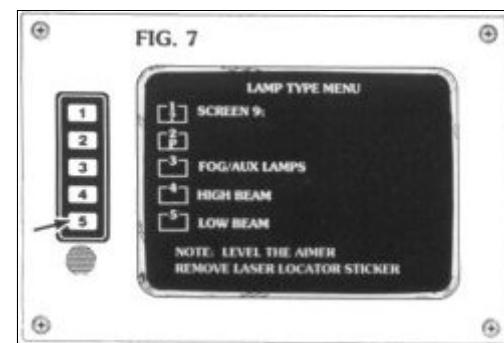
This screen (FIG. 7) allows the operator to select the type of lamp to be aimed. Make a selection by pressing the appropriate button. Make necessary adjustments to assure aimer is level. The aimer will then display the aiming screen (FIG. 8).

The selected lamp type is displayed across the top of the aim screen. At the upper left hand corner the bay number is displayed. Next to the bottom of the aim screen the measurement of the aim-point and the approximate candela (brightness) value is displayed. On the bottom line of the monitor, the aimer displays "PASSENGER SIDE" (FIG. 8), indicating the aimer is aiming the passenger side lamp.

Press the "PR" (PRINT) button, (Button 4). The operator can generate a printout of the current aim information, if the printer option is installed.

Press the "OK" button, (BUTTON 5). The aiming cycle for that lamp is completed (FIG. 9), and the aimer displays instructions to move the aimer to the driver side lamp (FIG. 10).

Press the "OK" button, (Button 5), a second time. The aimer will display (FIG. 11):



SECTION FIVE

LASER CONTROL SELECTOR

PREVIOUS STEP

TURN ON LASER

TURN OFF LASER

NEXT STEP

AFTER CENTERING, REMOVE LASER LOCATOR STICKER

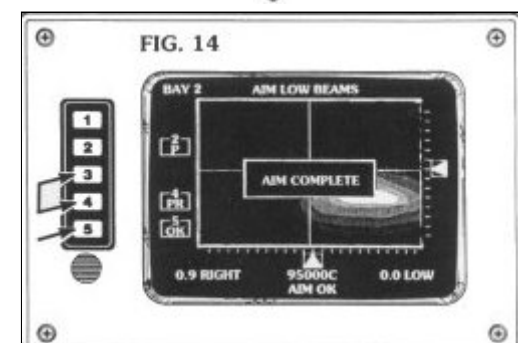
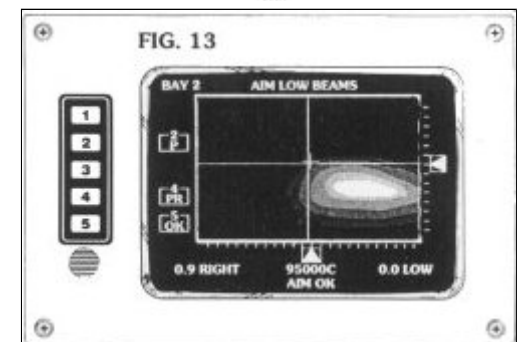
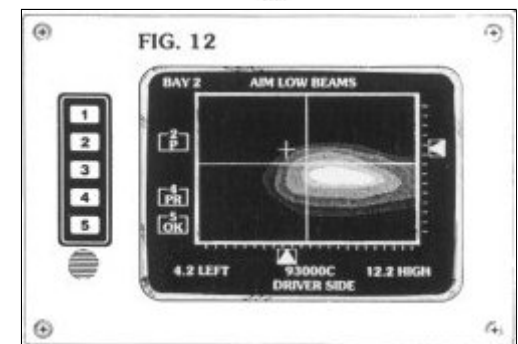
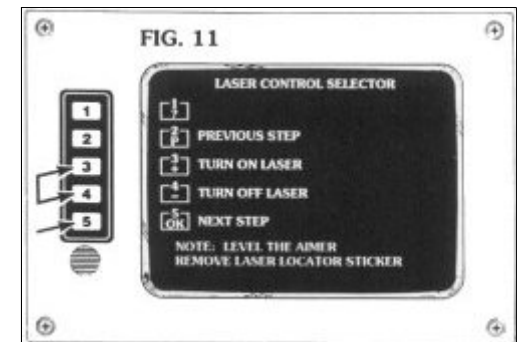
This control screen (FIG. 11) allows the operator to turn on the alignment laser to use as a guide when aligning the aimer head to the optical center of the driver side headlamp. When the alignment laser is energized the aimer will continue to beep, and display the message "CAUTION LASER ACTIVE" at the bottom of the monitor screen.

Press the "NEXT STEP" button, (Button 5). The aimer will display the aiming screen (FIG. 12).

The selected lamp type is displayed across the top of the aim screen. In the upper left hand corner the bay number is displayed. At the bottom of the aim screen the measurement of the aim-point and the approximate candela (brightness) value is displayed. On the bottom line of the monitor, the aimer displays "DRIVER SIDE" (FIG. 12), indicating the aimer is aiming the driver side lamp.

Press the "PR" (PRINT) button, (Button 4). The operator can generate a printout of the current aim information, if the printer option is installed.

Press the "OK" button, (Button 5). The aiming cycle for that lamp is completed (FIG. 13), and the aimer displays "AIM COMPLETE" (FIG. 14) and then returns to the Main Menu.



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SECTION FIVE

5.5 TRACK ALIGNMENT - "EXPERT MODE ON"

From the Main Menu (FIG. 1), press the "ALIGN HEADLAMPS" button, (Button 2). The aimer will display (FIG. 2):

SET BAY NUMBER

INCREASE VALUE
DECREASE VALUE
ENTER CURRENT VALUE

BAY NUMBER TO SET

1

The number displayed at the bottom of the screen (FIG. 2) is the active bay. To change to a different aiming bay, press the "INCREASE VALUE" button, (Button 3), or the "DECREASE VALUE" button, (Button 4), until the desired aiming bay number is displayed. When the desired aiming bay number is displayed, press the "ENTER CURRENT VALUE" button, (Button 5), the aimer will display (FIG. 3):

LASER CONTROL SELECTOR

PREVIOUS STEP

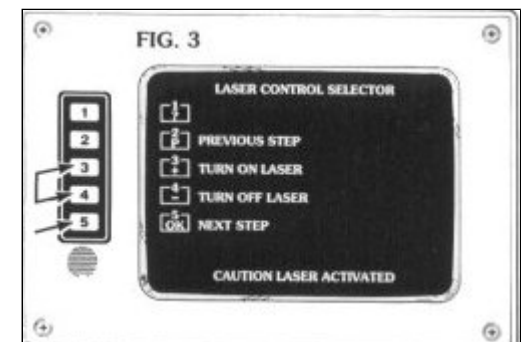
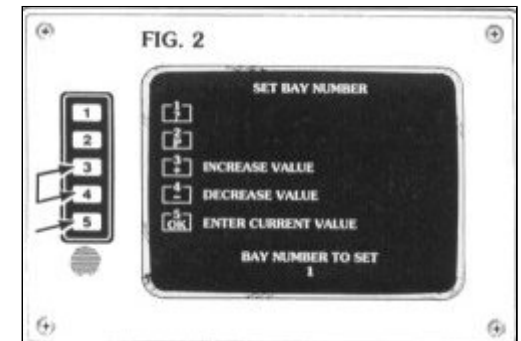
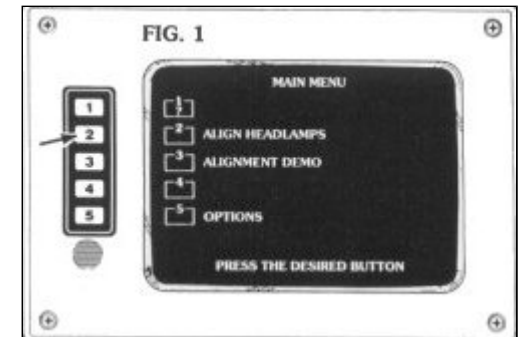
TURN ON LASER

TURN OFF LASER

NEXT STEP

This control screen allows the operator to turn on the alignment laser to use as a guide when aligning the aimer head to the optical center of the passenger side headlamp. When the alignment laser is energized the aimer will continue to beep, and display the message "CAUTION LASER ACTIVE" at the bottom of the monitor screen (FIG. 3).

Press the "NEXT STEP" button, (Button 5). The alignment laser will automatically be de-energized and the aimer will display (FIG. 4):



SECTION FIVE

LAMP TYPE MENU

SCREEN 9:

FOG/AUX LAMPS
HIGH BEAM
LOW BEAM

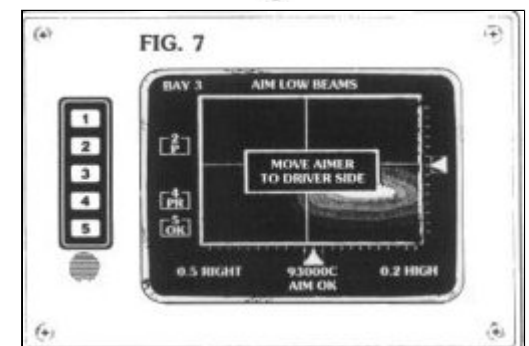
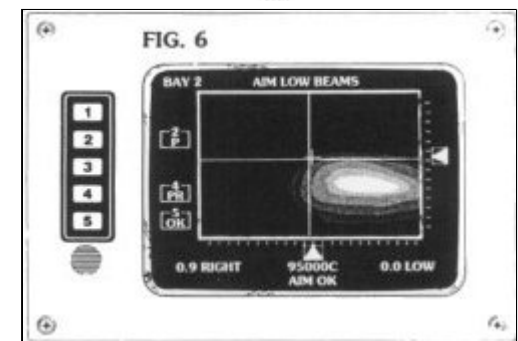
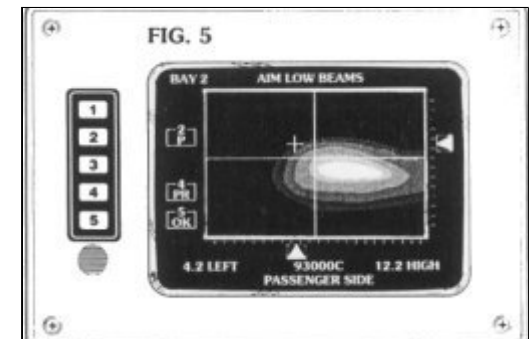
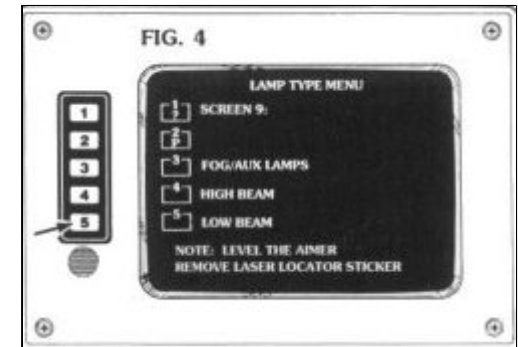
NOTE: LEVEL THE AIMER
REMOVE LASER LOCATOR STICKER

This screen allows the operator to select the type of lamp to be aimed. Make a selection by pressing the appropriate button. Make necessary adjustments to assure aimer is level. The aimer will then display the aiming screen (FIG. 5).

The selected lamp type is displayed across the top of the aim screen. In the upper left hand corner the bay number is displayed. At the bottom of the aim screen the measurement of the aim-point and the approximate candela (brightness) value is displayed. On the bottom line of the monitor, the aimer displays "PASSENGER SIDE" (FIG. 5), indicating the aimer is aiming the passenger side lamp.

Press the "PR" (PRINT) button, (Button 4). The operator can generate a printout of the current aim information, if the printer option is installed. Press the "OK" button, (Button 5). The aiming cycle for that lamp is completed (FIG. 6), and the aimer displays instructions to move the aimer to the driver side lamp (FIG. 7).

Press the "OK" button, (Button 5), a second time. The aimer will display (FIG. 8):



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SECTION FIVE

LASER CONTROL SELECTOR

PREVIOUS STEP

TURN ON LASER

TURN OFF LASER

NEXT STEP

AFTER CENTERING, REMOVE LASER LOCATOR STICKERS

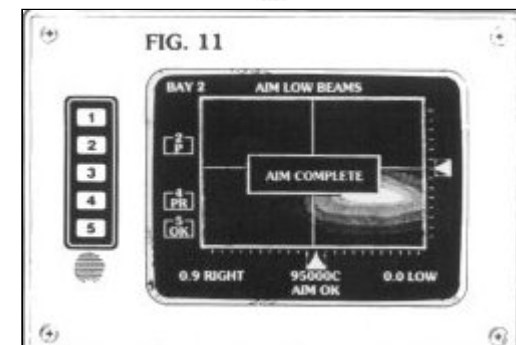
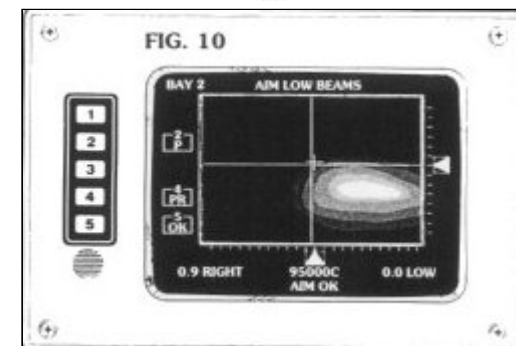
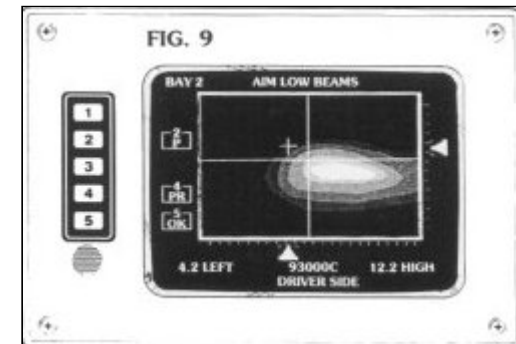
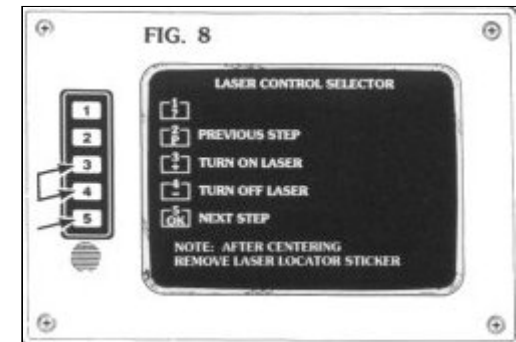
This control screen allows the operator to turn on the alignment laser to use as a guide when aligning the aimer head to the optical center of the driver side headlamp. When the alignment laser is energized the aimer will continue to beep, and display the message "CAUTION LASER ACTIVE" at the bottom of the screen (FIG. 8).

Press the "NEXT STEP" button, (Button 5). The aimer will display the aiming screen (FIG. 9).

The selected lamp type is displayed across the top of the aim screen. In the upper left hand corner the bay number is displayed. At the bottom of the aim screen the measurement of the aim-point and the approximate candela (brightness) value is displayed. On the bottom line of the monitor, the aimer displays "DRIVER SIDE" (FIG. 9), indicating the aimer is aiming the driver side lamp.

Press the "PR" (PRINT) button, (Button 4). The operator can generate a printout of the current aim information, if the printer option is installed.

Press the "OK" button, (Button 5). The aiming cycle for that lamp is completed (FIG. 10), and the aimer displays "AIM COMPLETE" (FIG. 11) and then returns to the Main Menu.



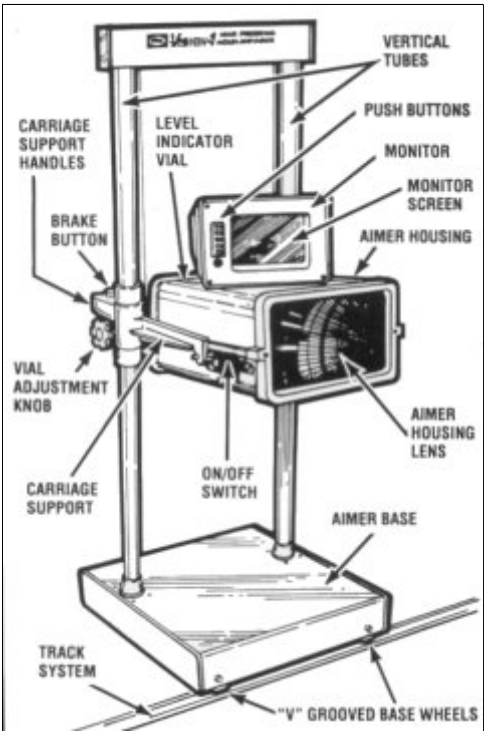
SECTION SIX

6.1 EQUIPMENT MAINTENANCE

The Vision 1™ Image Processing Headlamp Aimer has been designed to provide a lifetime of carefree performance. Maintenance is limited to occasional lubrication with a light machine oil of the base casters and the vertical tubes. The aimer housing lens should periodically be cleaned with an anti-static video screen cleaner, taking care not to allow any abrasive substance to come in contact with the lens.

DO NOT ALLOW ANY SOLVENTS TO COME IN CONTACT WITH THE AIMER LENS. DO NOT ALLOW ANY CONTACT BY WATER OR OTHER LIQUIDS TO THE AIMER OR MONITOR HOUSING.

THERE ARE NO USER SERVICEABLE COMPONENTS WITHIN THE AIMER HOUSING OR MONITOR ASSEMBLY. REFER ANY NEEDED REPAIRS OF THESE COMPONENTS TO QUALIFIED FACTORY SERVICE PERSONNEL ONLY.



6.2 EQUIPMENT OPTICAL CALIBRATION

The Vision 1™ Aimer has been calibrated at the factory and requires no further calibration at your site. The unit is designed so that once the factory calibration has been performed the unit cannot become "un-calibrated" unless the unit has sustained physical damage. The calibration is checked as part of the power-up self test to assure no problems are evident. If upon checking the calibration, the unit finds a malfunction, it will display "CALIBRATION CHECK FAILURE." If this happens, contact a HOPPY® Customer Service Representative at 1-800-390-7904 for corrective action.

6.3 EQUIPMENT SPECIFICATIONS

Vision 1: Image Processing Aimer
 Order #82001
 With United States Aiming
 Module and Floor Track

Printer: Printer with Module
 Order #82060
 With Twin Head Serial Dot
 Impact with Cartridge Ribbon
 RS-232-C Interface
 2.25" Paper Width

ELECTRICAL:

Voltage Input: 84-260 VA
Freq. Input: 50-60 H
Input Fuse: 1.5 Amp-250 VA
Power: 50 Watts @ 120 VAC

MECHANICAL:

Height: 63 Inches
Size (Base): 24.25 Inches X 22 Inches
Size (Aimer Head): 22 Inches X 16 Inches
Weight: 145 Pounds
Shipping Wt: 200 Pounds
Cubic Space 35 Cubic Feet
Track: 3 Sections (4 Feet Each)

AMBIENT:

Operating Temp: 30-105 Degrees Fahrenheit
Storage Temp: 0-120 Degrees Fahrenheit
Humidity: 0-95% (non-condensing)

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SECTION SIX

6.4 OPERATING SPECIFICATIONS

ACCURACY:

Tested by the Canadian Standards Association Photometric Laboratory for compliance to the Society of Automotive Engineers (S.A.E.) Specification for optical headlamp aimers (SAE J600 MAY81).

Equipment Compliance listing with American Association of Motor Vehicle Administrators (A.A.M.V.A.)

LIMITS:

Unit capabilities exceed SAE specification for headlamp height (12 inches to 54 inches).

DIAGNOSTICS:

Complete system check at power-up. System will prompt operator with message if a failure is noted.

DISPLAY:

Computer generated beam pattern image and operator prompts displayed on 9 inch graphics monitor.

OPERATION:

Completely menu-driven and user friendly.

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SECTION SEVEN

TROUBLESHOOTING

Follow is a corrective action guide to assist you in the event of a mechanical or electrical failure.

THERE ARE NO USER SERVICEABLE COMPONENTS WITHIN THE AIMER HOUSING OR MONITOR ASSEMBLY. REFER ANY NEEDED REPAIRS OF THESE COMPONENTS TO QUALIFIED FACTORY SERVICE PERSONNEL ONLY.

If all of the actions for a particular symptom have been completed without success, contact a HOPPY® Customer Service Representative at 1-800-390-7904 for further assistance.

SYMPTOM	CAUSE	ACTION	ACTION
Nothing Happens	Power Receptacle	Check for voltage at receptacle	
	Power Cord	Make sure both ends are plugged in securely	
	Aimer Power Fuse	Check continuity of fuse	
	Aimer Modules	Make sure all modules are plugged in securely	Call
Self Check Failure	Aimer Modules	Make sure all modules are plugged in securely	
Aimer does not roll straight	Base Casters	Check mounting and bearings	
	Floating Axle	Check mounting	Call
Aimer Head drifts down	Vertical Brakes	Check brake springs and shoes	
	Counterweight	Check counter-weight cables	
	Vertical Tubes	Check for excessive oil	
	Vertical Tube Bushings	Check for damage or excessive wear	Call

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SECTION SEVEN

TROUBLESHOOTING (CONT'D)

SYMPTOM	CAUSE	ACTION	ACTION
Aimer Head difficult to move up and down	Vertical Brakes	Check for operation	
	Counterweight	Check counterweight cables and pulleys	
	Vertical Tubes	Check for damage Lubricate tubes	
	Vertical Tube Bushings	Check for damage or foreign objects	Call

OPTION PACKAGES TROUBLESHOOTING GUIDE

SYMPTOM	CAUSE	ACTION	ACTION
Printer failure	Power Receptacle	Check for voltage at receptacle	
	Printer Power Supply	Check to make sure plugs are secure	
	Printer Module	Check to make sure module is plugged in properly	
	Printer Cable	Check to make sure cable is plugged in properly	
	Select Button	Press select button on printer	
	Paper Feed	Check for proper paper installation	Call
Serial Communication Failure	Serial Communication Module	Check to make sure module is plugged in properly	
	Serial Communication Cable	Check to make sure cable is plugged in properly	
	User Equipment	Check connected equipment for operation	Call

SECTION EIGHT

GLOSSARY LISTING

ACTIVATION CODE - The numeric sequence used to activate the aiming unit.

ACTIVATION SCREEN - The screen in which the activation code is entered into the aiming unit.

AERODYNAMIC HEADLAMP - The type of headlamps that are specifically designed to fit the finished design of the front of the vehicle. These lamps are typically sloped away at the center and the bottom of the lamp. These lamps commonly have replaceable bulbs.

AIM OK WINDOW - The "AIM OK" WINDOW defines the maximum allowable plus (+) or minus (-) measurement from zero of the horizontal and vertical aim axis at twenty-five (25) feet. Lamps which measure within the allowable limits will register an AIM OK indicator at bottom of screen.

AIM POINT - A predetermined point of placement within the projected light pattern measured at 25' from the light source.

AIMER HEAD - The portion of the aiming unit that contains the video monitor, aimer lens, aimer computer, and housings.

AIMER HOUSING - The portion of the aiming unit that contains the aimer lens, aimer computer, and aimer modules.

AIMER LENS - The optical lens in the front of the aimer housing. This lens allows the aimer to optically simulate twenty five feet within the confines of the aimer housing.

AIMER POWER FUSE - The fuse located in the power switch module. This fuse is a BUSS GMA 1.5 Amp 250 Volt fuse.

AIMER PREPARATION - The process of entering all pertinent information into the aimer at the time of the aimer setup.

AIMING BAYS - The area in which the aiming unit is to be used.

AIMING METHOD - A predetermined process of how the computer will calculate aim of a particular beam pattern.

AIMING MODULES - Contain the specific programs required to recognize and analyze headlamp alignment of U.S., European, and Japanese headlamp beam patterns. The Vision 1™ will not function without an aiming module properly inserted.

ALIGNMENT DEMO - Graphically displayed examples of headlamp aim and their values to vehicle and pedestrian safety.

ALIGNMENT LASER - The laser mounted inside the aimer housing, to align the aimer to the centerline of the vehicle and to locate the optical center of the headlamps.

ALIGNMENT TRACK - The floor track designed to aid the operator in keeping the aiming unit aligned with the vehicle.

A.A.M.V.A. - The administrative organization that recommends safety standards and applicability in regards to state rulings of vehicle inspection.

ANTI-STATIC VIDEO CLEANER - SCREEN CLEANER A spray cleaning available in most computer supply areas.

AREA/VEHICLE SETUP - The process of preparing the aiming area and the vehicle for the aiming process.

AUXILIARY LAMPS - Extra lamps on a vehicle. Also commonly called driving lamps.

BASE CASTERS - The wheels on the base of the aiming unit.

BEAM PATTERN - The image of light as it projects from a lamp.

BRAKE BUTTONS - The buttons, on the aimer carriage, used to release the vertical brakes.

C.S.A. - A world-recognized testing laboratory facility that investigates and reports findings of the continuity between products and the safety standards specified by law.

CANDELA - The increment of measure for the brightness of a lamp.

CARRIAGE SUPPORT - The metal frame supporting the aimer head.

CARRIAGE SUPPORT HANDLES - The portion on the rear of the carriage support used to raise and lower the aimer head. The brake buttons are located on the top of the carriage support handles.

COMBINATION LOW/HIGH BEAM - A headlamp that contains both the low and high beam lamps in one assembly.

COMPUTER IMAGE PROCESSING - The technology that allows the computer to analyze a video image which has been translated into a digital signal.

COUNTERWEIGHTS - The counterweights, located inside the vertical tubes, are designed to ease the up and down movement of the aimer head.

COUNTERWEIGHT CABLES - The cables connecting the counterweights to the carriage support.

SECTION EIGHT

GLOSSARY LISTING (CONT'D)

CRT - The abbreviation for Cathode Ray Tube. Also commonly known as a picture tube on a monitor.

CURRENT BAY - The aiming bay number that is displayed at the bottom of the monitor screen that has had the floor slope entered.

DRIVER SIDE - The left side of the vehicle, or the side the driver normally is seated in a vehicle built for the United States.

EUROPEAN BEAM PATTERN HEADLAMPS - The pattern is most identifiable by the flat upper cut-off of the light beam.

EXPERT MODE - The operation mode that bypasses explanatory screens in the aiming process.

FACE OF THE HEADLAMP - The outer lens of the lamp.

FACTORY CALIBRATION - The tuning adjustment of the aiming unit at the manufacturing facility.

FBA METHOD - The S.A.E. recommended method of aiming headlamps by measuring percentages of light at particular test points on an aiming screen at the prescribed distance of 25' from the producing light source.

FIDUCIARY MARK - A manufacturer mark designating the optical center of a lamp.

FLOATING AXLE - The pivoting axle in the base of the aiming unit.

FLOOR SLOPE - The deviation from "true level" of the floor of the aiming bay. This value is measured in degrees.

FOG LAMPS - Lamps specifically designed for use in foggy weather.

FRACTIONAL GRADIENTS - The bands of light around the most intense area in the beam pattern. These are usually defined in percentages of the lamp maximum intensity.

G2 SPLIT IMAGE TRANSIT AND TARGET - A HOPPY® product used to measure grades and slopes.

GRID LINES - The lines used in a lamp to refract or reflect light into a specific area of the beam pattern.

HEADLAMP ADJUSTMENT SCREWS - The screws used to adjust the position of the headlamp. There is usually one horizontal adjustment screw and one vertical adjustment screw.

HELP SCREENS - The explanatory screens that are made available to describe each step of the setup or aiming procedures.

HOPPY® - The trade name for Hopkins Manufacturing Corporation.

HORIZONTAL WINDOW - The horizontal tolerance value in which the aim of a lamp is acceptable.

KEYBOARD - The 5 button assembly on the left face of the aimer monitor.

LASER ALIGNMENT - The method of using the laser to align the aiming unit to the vehicle, by placing the laser on a point representative of the centerline of the vehicle. Moving the laser up and down that centerline, while adjusting the aimer base. This is repeated until the laser accurately follows the centerline of the vehicle.

LASER LOCATORS - The adhesive stickers that are placed over the optical center of the lamps, so the laser will be visible.

LEVEL VIAL - The bubble vial located on top of the aimer housing, used to level the aimer head during the aiming process.

MAIN MENU - The main display screen on the aimer monitor.

MOISTURE CONDENSATION - The vapor trapped inside a lamp. This moisture refracts the light pattern before passing through the grid lines and lens of the face of the lamp. This causes the light pattern to flare, making the lamp unstable.

MONITOR - The display unit on top of the aimer housing.

MONITOR HOUSING - The case holding the monitor.

NOVICE MODE - A mode of operation in which the aiming process is explained, by text screen, step-by-step.

OPTICAL CENTER OF A LAMP - The point on the face of the lamp that represents the center of the reflective parabola of that lamp.

PASSENGER SIDE - The right side, or where the passenger normally is seated in a vehicle built for the United States.

PHOTOMETRIC - The science and studies of lighting.

PRINTER - The optional component used to create a written copy of the aiming unit statistics.

PRINTER MODULE - The module that plugs into the aimer housing, that sends the information to the printer.

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PRINTER POWER SUPPLY - The component that supplies the electrical power to the printer.

PROJECTED ZERO - The point level and square with the lamp. At this point the horizontal and vertical axis is zero to the lamp.

PULLEYS - The supports for the counterweight cables, located in the top of the vertical tubes.

SELECT BUTTON - The button on the printer, labeled "SEL", that enables the printer.

SELF TESTS - The software routine, run by the aimer CPU, that checks various functions of the computer and the video system.

SERIAL COMMUNICATIONS - The communication link between the aiming unit and another computer.

SOCIETY OF AUTOMOTIVE ENGINEERS (SAE) - The primary administrative organization that designates safety and operating standards to the automotive manufacturing industry.

TRACK ALIGNMENT - The method of attaining the same alignment angle relations between the aimer and the vehicle through the use of a permanently mounted track system.

U.S. HEADLAMPS - Lamps designed to U.S. recommended specifications.

VEHICLE CENTERLINE - The longitudinal center of the vehicle.

VERTICAL BRAKES - The components, located in the support carriage, designed to hold against the vertical tubes to keep the aimer head in position.

VERTICAL TUBE BUSHINGS - The composite sleeves inside the carriage support, that guide the vertical tube through the carriage support.

VERTICAL TUBES - The tubes on which the aimer head move up and down.

VERTICAL WINDOW - The vertical tolerance value in which the aim of a lamp is acceptable.

VIDEO SYSTEM - The camera and related components, located in the aimer housing, which view the lamp beam pattern.

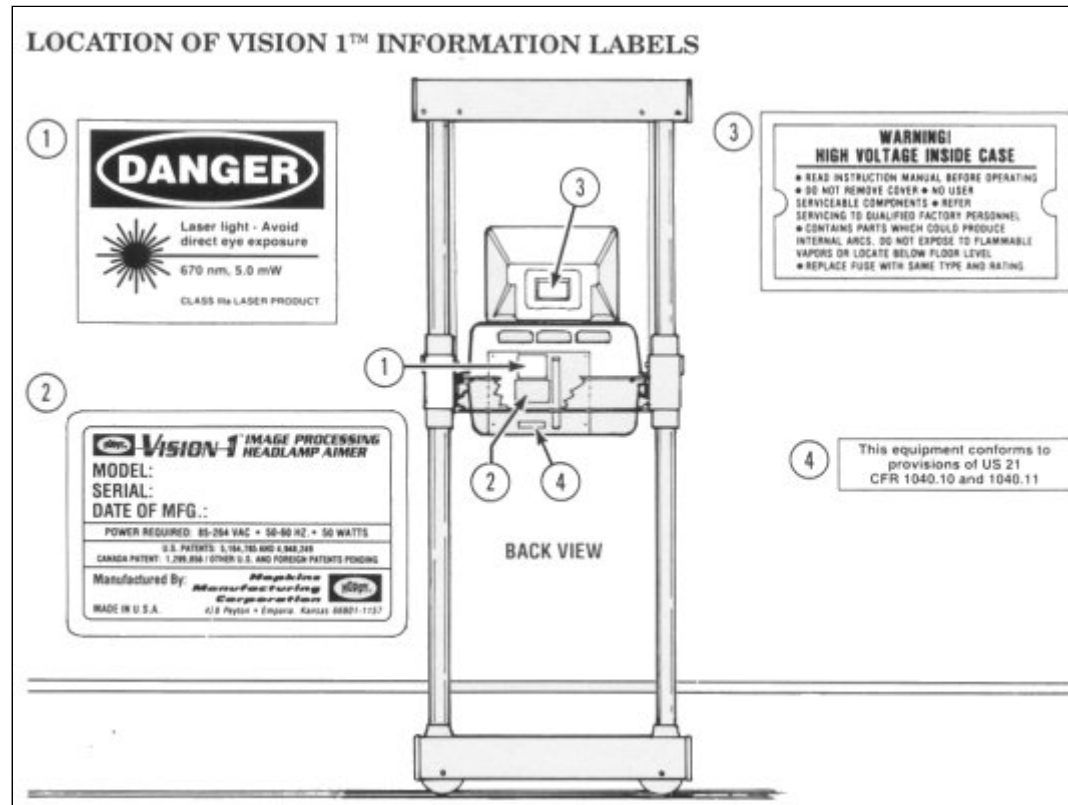
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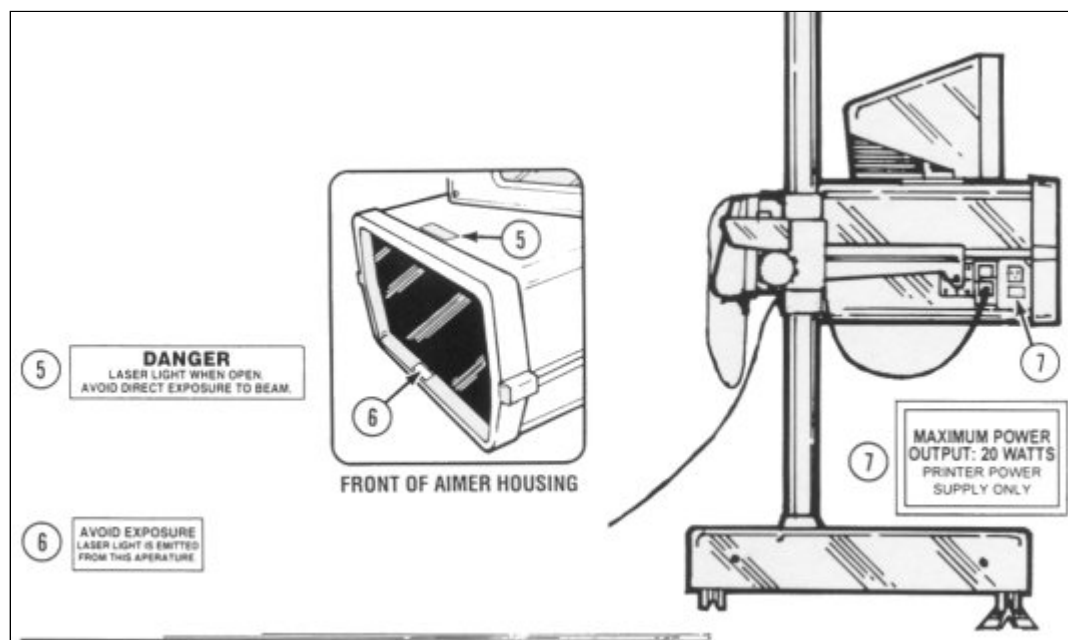
SECTION EIGHT

LOCATION OF VISION 1™ INFORMATION LABELS

Labels shown on this page are not actual size.



CAUTION: - Use of controls or adjustments or performances of procedures other than those specified herein may result in hazardous laser light exposure.



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**MADE IN THE
USA**

***Hopkins
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