



# **VISION II PRO™**

**IMAGE PROCESSING  
HEADLAMP AIMER**

## **INSTRUCTION MANUAL**

**AMERICAN AIMERS, INC**

**3529 WEST 6<sup>TH</sup> Ave. Emporia, Kansas 66801**

**1-877-343-7703**

# Vision II Pro™ Manual

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## Introduction and Equipment Precautions

Congratulations! You now have the world's most advanced headlamp aiming technology available to the U.S. automotive aftermarket. The Vision II Pro™ *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 II Pro™ the most accurate headlight aiming device available.

The versatility of the Vision II Pro™ system enables you to aim nearly any headlamp on any make of vehicle throughout the world. Standard, auxiliary, fog, rectangular, round, or aerodynamic VOL, VOR, HIGH, LOW headlamps can be precisely aimed, regardless of size.

The precision accuracy of laser technology is used to determine the vehicle centerline and optical center of the headlamps. Computer-image processing technologies form the basis for the Vision II Pro™ System. It analyzes and displays the light pattern as it would appear on the roadway at twenty-five feet (25') ahead of the vehicle. Upon positioning the headlamp, a digital translation of the headlight beam is displayed on the screen, graphically illustrating the ideal alignment position in inches or centimeters. While viewing the screen, you adjust the headlamp adjustment screws to align the beam pattern cross-hairs with the visual aim indicators.

The Vision II Pro™ will never become obsolete. It will always be on the leading edge of technology. The system can be expanded when new aim patterns develop.

This user manual should be read in its entirety before operating the Vision II Pro™ System. If you have any questions, please contact an American Aimers Representative for further information at 1-877-343-7703.

**FOR YOUR SAFETY, READ AND FOLLOW ALL CAUTION AND WARNING LABELS AFFIXED TO YOUR EQUIPMENT.**

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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 thereof, 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 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 device designed to aim headlights that comply with the Society of Automotive Engineers recommended practices described in J599 and J600. All lamp and lamp patterns do not conform to these recommended practices.

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

**WARNING: Direct Sunlight Can Damage Unit Voiding Warranty.**

# Vision II Pro *Optical Headlamp Aimer*

## Unpacking & Inspection

UPON receipt open the boxes and check contents for any shipping damage. If necessary, notify carrier of damage and make a claim through the carrier. Check the Boxes for the following content:



**Box 1** — Vision II Pro Head contains: (1) Vision II Pro Head Manual; (1) Warranty Card; (1) Transit (1) Bundle of Laser Targets; (1) Vision II Pro Head As-

### Box 2 - Boxed Base & Hardware

Box 2 contains the following: Wheels (3), Brake Handle (1), T-Base Front (1), T-Base Rear (1) Mast Cover (1), Charger (1), Small Bag A (1), Large Bag B (1), Wheel & Cam Mount (1), Shaft (1), Mast Support Column (1), & Anti-Rotate Bracket (1), as shown in **Figure 1** below.

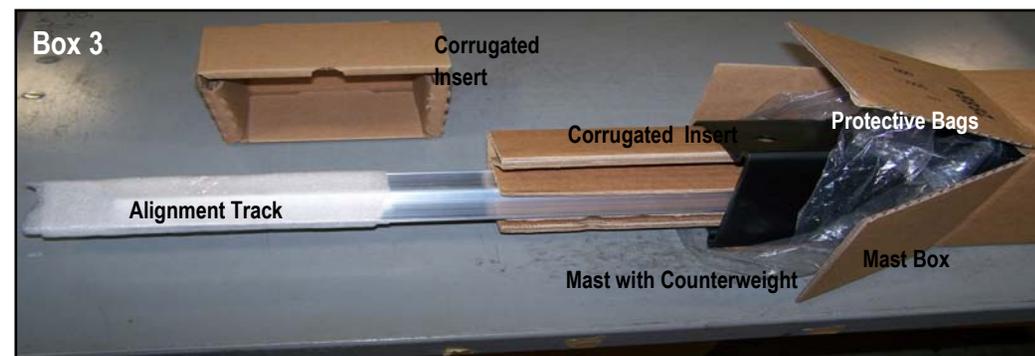


#### Hardware — Small Bag (A) Contains:

1. Cable Plug / Qty. 1
2. 1/2" Cap Bolt with Nylon Insert / Qty. 2
3. Belleville Washer / Qty. 1
4. Strips of Velcro / Qty. 1
5. 5/16" x 1/2" Hex Head Bolt / Qty. 6
6. 3/8" Wheel Bolt / Qty. 1
7. 5/16" Flat Washer and Anti-Rotate Bracket

#### Base Bolts — Large Bag (B) Contains:

1. 3/8" - 16 X 6-1/2" Hex Head Bolt / Qty. 2
2. 3/8" - 16 Hex Nut / Qty. 2
3. 3/8" - 16 Hex Nylon Loc Nut / Qty. 4
4. 3/8" - 16 X 5" Hex Head Bolt / Qty. 2
5. 3/8" - 16 Flat Washer / Qty. 2



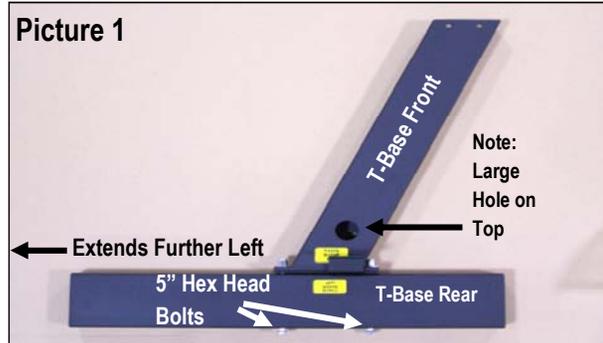
**BOX 3** — The **Counterweight** is secured in the middle of the **Mast** with two cardboard inserts. The inserts will need to be removed from each end. Use caution when removing the inserts to prevent the **Counterweight** from falling out. It may be necessary to hold the **Counterweight Cable** to prevent the **Counterweight** from sliding out of the mast.

**NOTE: Counter weight is VERY heavy; use caution.**  
Remove 4' sections of track (3 — 4' sections of track).

#### STEP 1. TOOLS REQUIRED

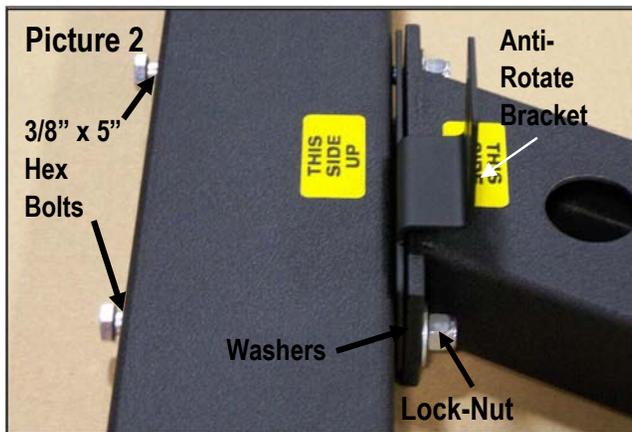
- 3/8" Allen Wrench
- 1/2" Socket
- 1/2" Box-end Wrench
- Torpedo Level

When facing towards the front of the "T" base Front "T" should be extending further to the left side than right to allow for center holes to align. (Picture 1)



#### Step 2. BASE ASSEMBLY

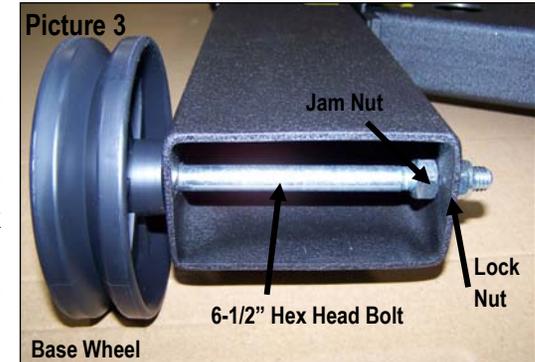
On a flat surface, position the two base legs to form a "T" Install the Anti Rotate Bracket between the Front and Rear Base as shown. (Picture 2) There are "This Side Up Stickers" located on both of the Base Legs to aid you in proper positioning of the bases. With center holes aligned, install 5 inch Hex Head Bolts so the Washer and Lock Nut are on the backside of the Rear "T" Base. At this time, tighten bolts to be snug, while keeping pieces flush with top surfaces. Adjustment will be made later, at this section, to level the Aim Head.



#### Step 3. WHEEL ASSEMBLY

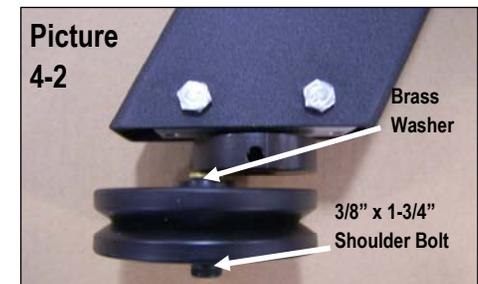
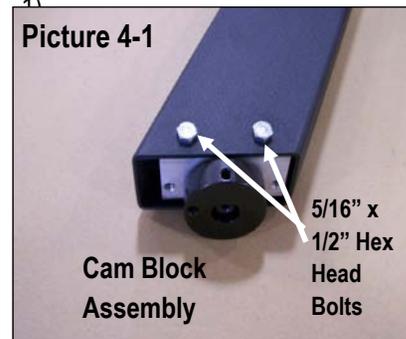
Using 6-1/2" Hex Head Bolts, install the wheels so that they are on the front side of the Base.

A Jam Nut is installed on the inside of the Base while a Lock Nut is placed on the outside. NOTE: Bolt should be locked in place to allow Wheel to spin freely (without excess play in the Wheel). This can be accomplished by pushing the Bolt through the Wheel and into Base hole. Place Jam Nut on inside and while pushing Bolt and Wheel against Base, tighten Jam Nut to inner surface and then turn nut one extra turn. Tighten Lock Nut to secure bolt. (Picture 3)



#### Step 4 CAM BLOCK ASSEMBLY

Using two 5/16" x 1/2" Hex Head Bolts place the Cam Block assembly into the Base and tighten. (Picture 4-1)

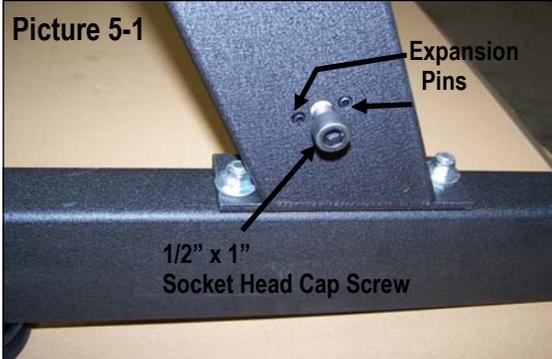


Using a 3/8" Shoulder Bolt, install the Wheel to the Cam Block assembly as shown. (Picture 4-2)

#### Step 5. MAST ASSEMBLY

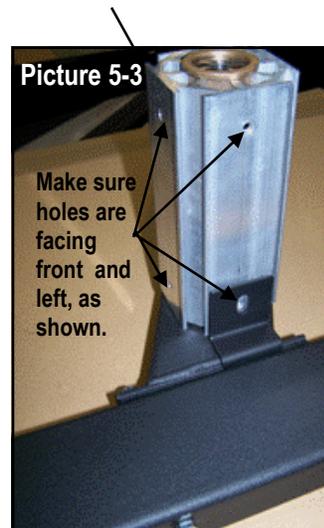
1. Place Base on a sturdy flat surface.

The large hole in the Base must be in the up position. The shaft fits through this hole rotate the shaft until the two expansion pins align with the holes in bottom of Base. Holding shaft, turn Base on its side and install bolt and tighten completely. (Picture 5-1)

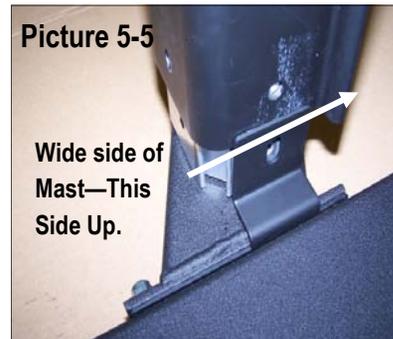
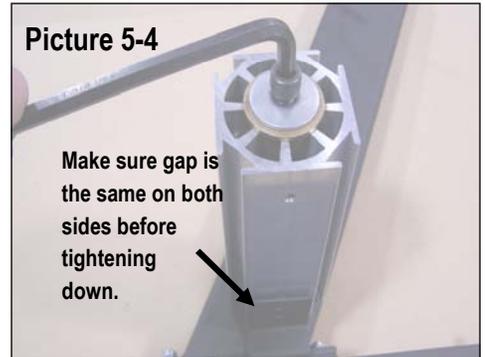


2. After installing the Shaft, remove the "This Side Up" stickers. (Picture 5-2)

3. Place Mast Support Column over Shaft. Note: The Mast holes need to be positioned so that one set of holes face the Anti Rotate Bracket and the other set of holes are to the left. (See Picture for proper positioning).



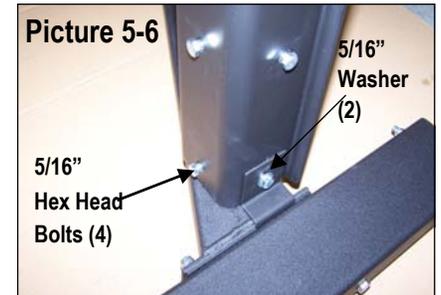
4. Secure Mast column in place using a 1/2" x 1" Socket Head Cap Screw, tighten down to approximately 100 Inch lbs.



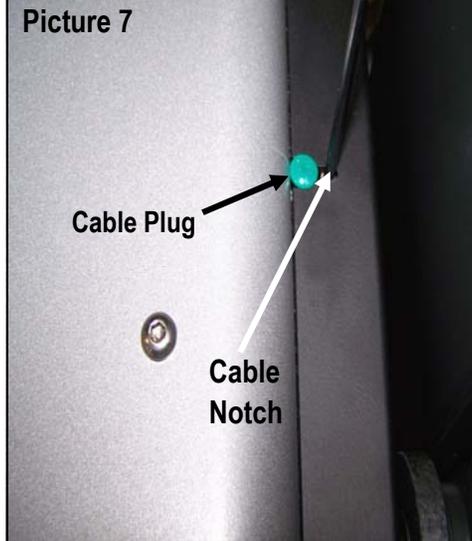
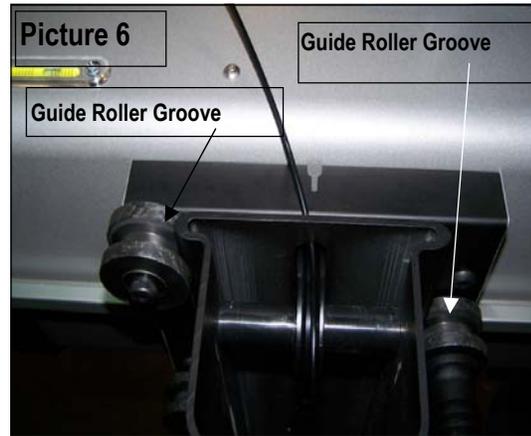
The Mast is supported on the mast support column by 4 - 5/16" x 1/2" Hex Bolts. Carefully place the Mast over the support column and make sure the Mast goes inside the Anti Rotate Bracket. **Caution: It is necessary to hold the counterweight cable to keep Counterweight from falling out of the Mast while installing to the Mast Support Column.**

First, using 1- 5/16" Flat Washer and 1- 5/16" Hex Head Bolt, attach the Anti Rotate Bracket to the Mast. Then attach the remaining 3 - 5/16" Hex Head Bolts after all holes align, and tighten completely.

Note: Adjustments might need to be made to get holes to align. This can be done by loosening the Base Bolts or by slightly bending the Anti Rotate Bracket.



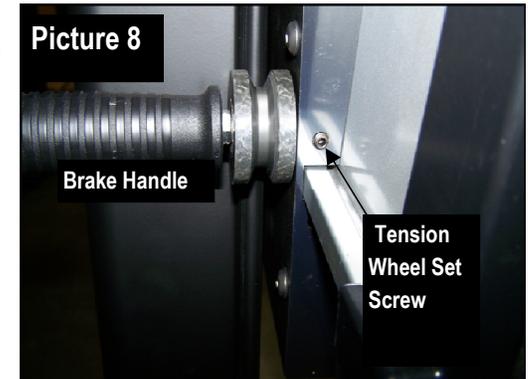
6. Place the Aimer Head over the top of the Mast. Align the guide rollers with the mast groove and pull down into position as shown. (Picture 6) **Note: It is recommended to use two people for this step —1 person to hold the Mast from moving, and the other to put the Aimer Head on the Mast.**



Insert the Counterweight Cable into the Cable Support Notch. Lightly place the Cable Plug into the Cable Support Notch, to prevent the cable from popping out of the hole when the Aimer Head is in the raised position. (Picture 7)

The tension on the rollers is preset at the factory, however, if the unit does not roll smoothly or rocks and wobbles, adjustments can be made if necessary.

If adjustment is required, simply loosen the Tension Wheel Locking Nut, loosen or tighten the Tension Adjustment Set Screw as needed, and tighten down the Tension Wheel Locking Nut.



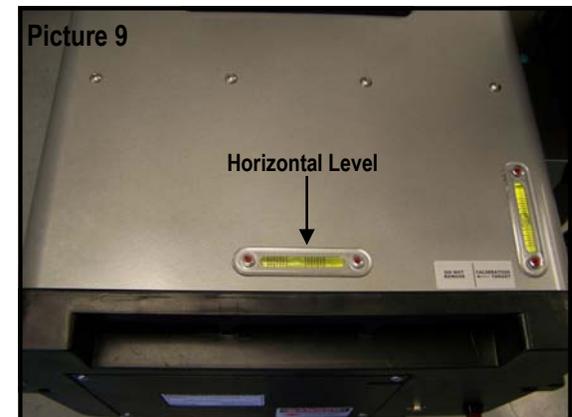
Screw Brake Handle on to the Tension Adjusting Wheel bolt. The Brake Handle only needs to be turned lightly to lock Aimer Head in position.

### LEVELING HEAD, Left To Right

Place assembled unit on a known level surface. With the Aimer Head setting in the operating position, move the Aimer Head up or down on the Mast so it is approximately in the center.

Locate the horizontal level on the back edge of Aim Head as shown in Picture 9.

Reading the level, adjust the Base sections by loosening the bolts and moving the Mast Left or right until the Aimer Head is level; then tighten bolts.



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## **SECTION ONE**

### **1.3 SELECT LANGUAGE**

The Vision II Pro™ has English set as its default language. However, if you would like to change the language to Spanish or French, you can easily do so by following these instructions.

1. Making sure the Aimer is off, press and hold Button 1; then turn the main power switch on. Continue pressing Button 1 until the language screen is displayed.
2. Select Language. This selection is automatically stored in memory.

Note: If you need to change the language simply turn the power off and repeat the process.

#### **French**

La mode d'emploi pour Vision II Pro™ est en anglais. Si vous desirez changer et choisir soit l'espagnol, soit le francais, vous pouvez le faire en suivant les instructions ci-dessous.

1. Assurez vous que la machine est en position »off ». Pressez et tenez appuyee la touche 1 alors que vous mettez la machine en marche. Continuez d'appuyer la touche 1 jusqu'à ce que l'ecran pour le choix du language apparaisse.
2. Choisissez le language desire. La selection sera automatiquement conservee dans la memoire de l'appareil.

Note: Si vous desirez changer le language, eteignez la machine et repetez le procede.

#### **Spanish**

Vision II Pro™ automaticamente selecciona el Inglés como su idioma de preferencia . Si Ud prefiere cambiar a otro idioma como el Español o Frances, Ud. facilmente lo puede hacer siguiendo las siguientes instrucciones.

1. Asegurese de que el Aimer este apagado, presione y sostenga la tecla 1, luego presione el boton principal de encender. Continue presionando la tecla 1 hasta que aparesca en la pantalla la opcion de idiomas.
2. Seleccionar idioma. Esta seleccion esta automaticamente guardada en la memoria.

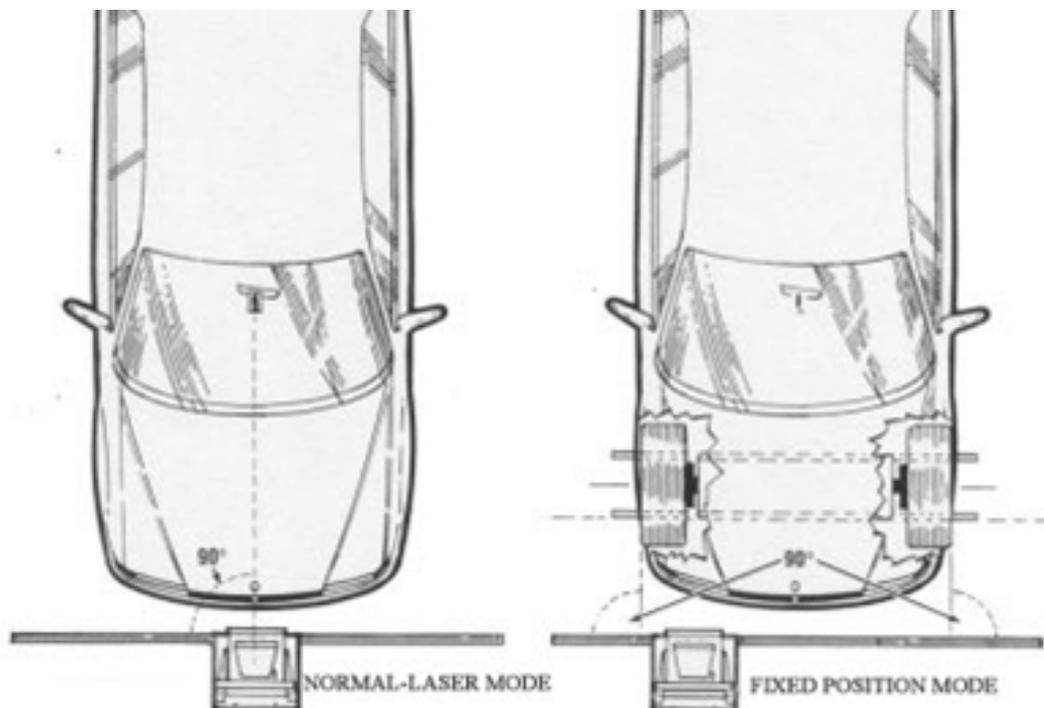
Nota: Si Ud. Desea cambiar a otro idioma, simplemente presione la tecla de apagar y repita el proceso.

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## 1.4 ALIGNMENT METHOD

There are two recommended methods to ensure the Vision II Pro™ aimer is aligned with the centerline of the vehicle.

The LASER ALIGNMENT method utilizes the on-board laser to align the Vision II Pro™ unit with the vehicle centerline. The LASER ALIGNMENT method is the most widely used method and the Vision II Pro™ is pre-set at the factory to this mode. The FIXED POSITION method is for permanently installed applications where the track is 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.



***IMPORTANT:*** Unless you have a fixed track and need to change the laser mode, please proceed to Section 1.5 on the following page.

If you choose to change to the FIXED TRACK mode you can do so by following these steps:

- 1.) Press and hold in on **Button 1** while turning the main power switch on. **Keeping Button 1 pushed**, the aimer will proceed to a *calibration screen* - wait approximately ten seconds and release the button. The Select Language Screen will appear; select button (5) **Skip**. The Select Track Style menu will appear; select button (3) **Fixed**. The information will be saved. Note – If the screen does not appear, repeat the process

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## 1.5 PRINTER OPTION

If your aimer has the printer option, install the printer on the aimer back plate, use the two mounting screws provided. Plug the printer in on the control board located on the back of the unit. To activate the printer press and hold the On/Off switch on the printer. A lighted “on-line” light located on the printer will verify that the printer is operational. See instructions included with printer.



## 1.6 AIMER PREPERATION

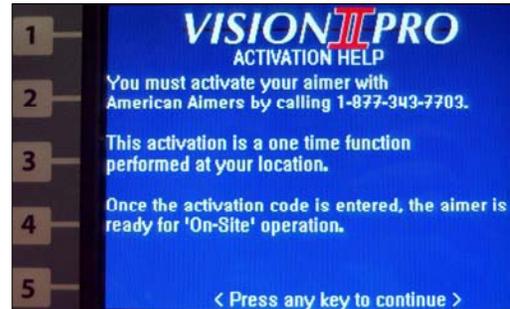
It is a good idea to allow the aim head to charge for at least 4 hours prior to use. Press the on/off switch on the back of the unit and the display will come up. The unit will perform several self tests to verify system calibration. Should an error be detected the monitor will display an error message. Reference the Troubleshooting Guide; if corrective action does not rectify the problem; contact an American Aimers Customer Service Representative at 1-877-343-7703, for corrective action.

If no problems are detected, the unit will display the American Aimers and Vision II Pro™ logo screen after approximately ten seconds.



## 1.7 ACTIVATION SCREEN

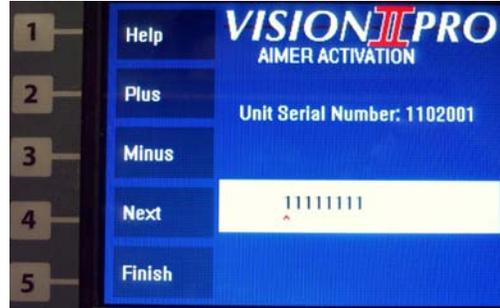
If you have reached this screen, contact an American Aimers Customer Service Representative At 1-877-343-7703 for your activation code. You will need the Serial Number off of the back of the aim head. This activation code is a one time entry function performed at your location.



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The Aimer Activation Code unlocks your Vision II Pro™ Aiming System. Enter the activation code provided by American Aimers. The number to be changed is indicated with a red cursor. Using the plus/minus buttons change the number to the correct value, and then push next. The cursor will move to the next number, continue until all numbers are entered then press the Finish button.

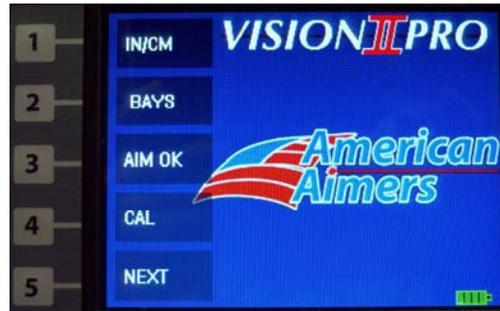
Once the activation code is entered, the aimer is ready for “On-Site” preparation.



## OPTIONS SCREEN

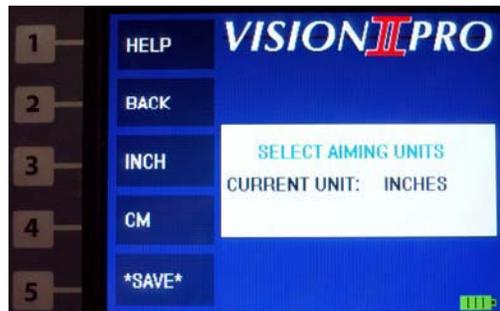
The Vision II Pro™ has been calibrated for optical accuracy at the factory; however, you must input certain settings to tailor the aimer to your facility. The OPTIONS menu buttons will allow the operator to:

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.



## 1.8 SELECT MEASUREMENT

From the OPTIONS Screen, press the IN/CM button. This will allow the user to select either inch increments, or centimeter increments. When the desired measurement is displayed as active, press \*SAVE\* to continue.



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## 1.9 SET-UP AIMING BAYS

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

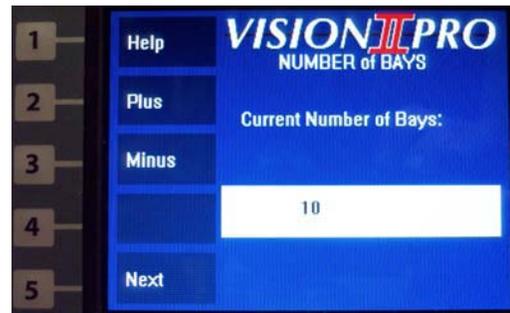
From OPTIONS screen, press BAYS button.



## 1.10 SET NUMBER OF BAYS

This menu allows the operator to select from one to fifteen areas to be designated as aiming bays.

Enter the number of separate aiming bays by pressing the "PLUS" and "MINUS" buttons. When the number displayed is the number of separate aiming areas used, press the "NEXT" button to continue with aimer preparation.



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## SECTION TWO

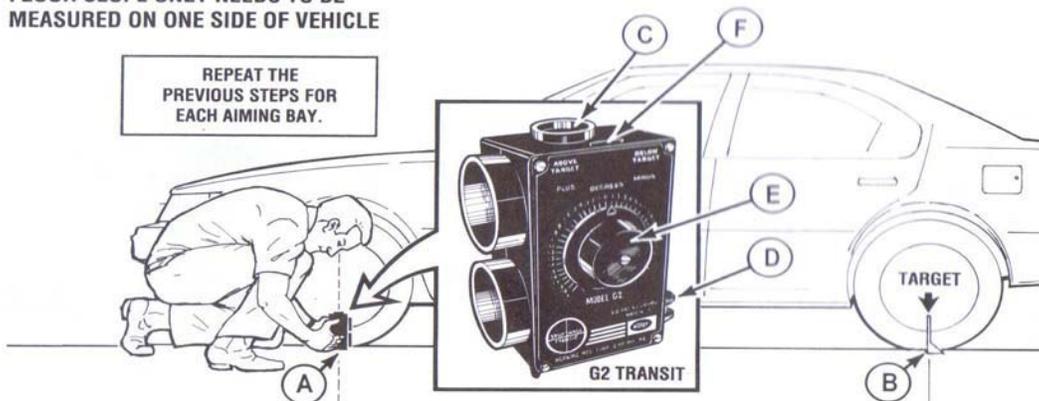
### 2.1 SET FLOOR SLOPE

Since few shop areas have the same floor slope, the floor slope of each aiming bay must be individually measured and entered. A 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 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 the top of the 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 “Plus” button (Button 2) for a plus reading, or “Minus” button (Button 3) for a minus (-) reading. Reading on level indicator dial should be rounded up to the nearest (0.1) of degree. (See instruction sheet with transit for additional details). Press and hold the appropriate button (Button 2 or Button 3) until the proper value is shown at the bottom of the screen. When the proper value is displayed, press the “NEXT BAY” button, (Button 4), to enter the floor slope values for other aiming bays, repeat the previous procedure for each bay. Press the “FINISH” (Button 5) to exit bay setup and save new values.



FLOOR SLOPE ONLY NEEDS TO BE MEASURED ON ONE SIDE OF VEHICLE

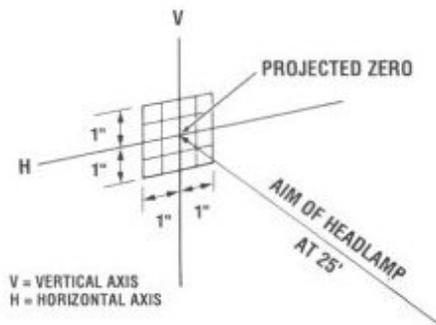


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## 2.2 Conversion Chart

### CONVERSION CHART Degrees to Inches

| <u>Degrees</u>               | <u>Inches</u>                                    |
|------------------------------|--|
| 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" +/-                            |
| <b>1% Deviation</b> 0.6° +/- | <b>at 25 Feet</b> 3.138" +/- <b>1% Deviation</b> |
| 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" +/-                            |



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## 2.3 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 “OPTIONS” screen press the “AIM OK” button, (Button 3). At the “Aim OK Limit-Horizontal” screen, use the increase or decrease buttons to get the desired value, press the “NEXT” button

At the “OPTIONS” screen press the “AIM OK” button, (Button 3). At the “Aim OK Limit-Vertical” screen, use the increase or decrease buttons to get the desired value, press the “NEXT” button.

At the Aim OK Limit-Vertical Screen, use the increase or decrease buttons to get the desired value, press the **\*SAVE\*** button.



# Vision II Pro™ Manual

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## **SECTION THREE**

### **3.1 AREA/VEHICLE SETUP**

The aiming area floor should be relatively clean and dry with no unusually excessively 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 present, replace lamp assembly.
- ❖ Stabilize suspension by rocking vehicle sideways.

Although the Vision II Pro™ 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. In most cases the hood will need to be raised to access the adjustment screws.

## **SECTION FOUR**

### **4.1 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 II Pro™ 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 a part of the power-up self test.

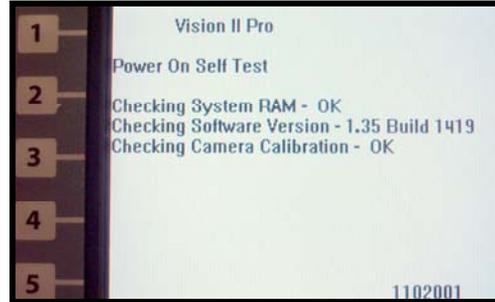
If a calibration problem is noted, the monitor will display the error. Should the monitor display an error message upon start-up, reference the trouble-shooting guide, if corrective action does not rectify the problem; contact an American Aimers Customer Service Representative.

### **4.2 PRINTER OPTION**

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

### **4.3 ALIGNMENT TRACK**

An alignment track is provided with Vision II Pro™ to assure greater accuracy and repeatability. When placed under the front set of wheels of aimer it will roll straight and true over dirt and cracks. (Recommended for best results).



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## 4.4 CALLIBRATION PROCESS

The Vision II Pro™ has been calibrated at the factory. However, it is recommended that you verify calibration before using your headlight aimer for the first time and on a monthly basis. There are three things that get calibrated during this process (1) Internal Digital Level (2) Vehicle Miss-Alignment Sensor (3) Vehicle Centerline Laser. To get started, from the Main Menu select the Options button (5) then select the CAL button (4).



### STEP 1

Using a 5/32" T-Handle or Allen wrench loosen the set screw on the wheel cam. Adjust the cam until the vertical bubble vial on the top of the aim head is level, then tighten set screw.



### STEP 2

Locate the calibration marks located on the back of the LCD screen and rotate the bezel until the 2 marks are perfectly aligned as shown.



### STEP 3

Rotate the laser knob on the side of the bezel and verify the laser dot hits the 2 calibration targets on the top of the aimer case as shown. If adjustment is needed, you can adjust the set screws on the side of the laser knob until the dot hits both calibration targets.



Front Laser Target

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### STEP 4

Verify that the bubble in the level vial is still level. Then Verify the bezel calibration marks are perfectly aligned and the Laser dot is hitting both calibration targets, then push button (5) **Save**. The calibration is stored in the internal memory and the aimer is ready for use.



Rear Laser Target

# Vision II Pro™ Manual

## SECTION FIVE

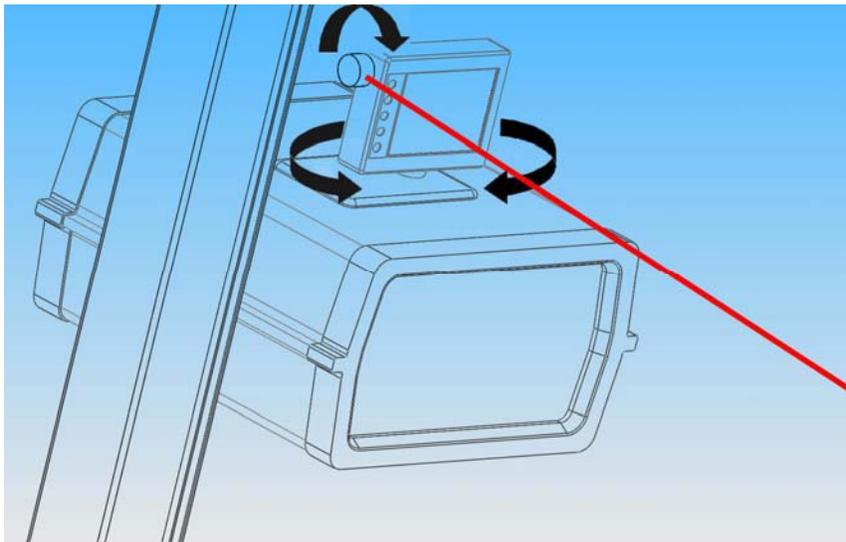
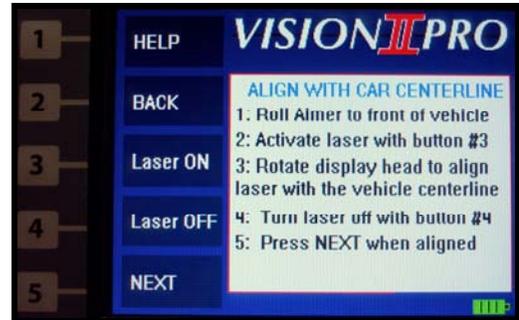
### 5.1 AIM LAMPS

From the main menu, press the “AIM LAMPS” button (2).



### 5.2 ALIGN AIMER

Roll the aimer to the center of the vehicle and activate the centering laser by pressing button (3). When the alignment laser is energized, the aimer will continue to beep and display the message “LASER ON” at the bottom of the monitor screen. Rotate the LCD display to position the laser dot on the centerline point of the vehicle on the windshield (Rear view mirror, Laser target). Next, position laser on a point representative of the centerline of vehicle (Bumper, Hood Ornament, Center of Grill or point on fascia) adjust the LCD display and roll aimer right to left until the laser is intersecting both center points by turning the laser knob up and down. Turn laser off button (4) then press the next button (5) this will save the offset value for this aim.



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## 5.3 SET BAY NUMBER

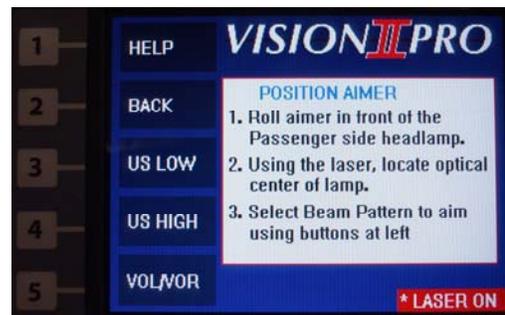
The number displayed in the middle of the screen is the active bay. To change to a different aiming bay, press the “PLUS” button, to increase the value or the “MINUS” button to decrease the value until the desired aiming bay number is displayed. When the desired aiming bay number is displayed, press the “NEXT” button (5). The next screen will display “Position Aimer” and will energize the center lamp laser.

NOTE: If only one bay is entered this screen will not be displayed.



## 5.4 POSITION AIMER TO LAMP (PASSENGER SIDE)

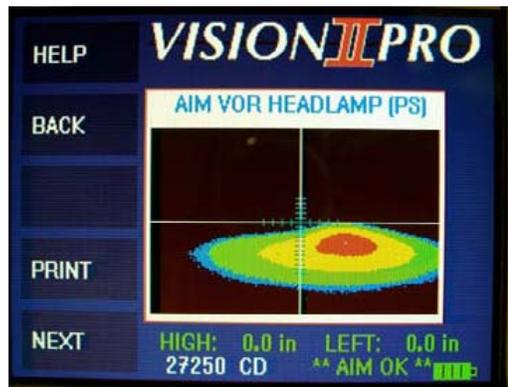
At this screen the lamp alignment laser is energized and will continue to beep and the screen will display the message “LASER ON”. Roll the aimer in front of the **Passenger Side** headlamp, place laser target sticker on lamp identifying the lamp optical center or fiducial mark. Place laser on the middle of sticker. Set the Brake Handle. Select the lamp type to be aimed LOW/HIGH/VOL/VOR/FOG. After the headlamp type is selected it will de-energize the laser.



## REMOVE LASER LOCATOR STICKER

### Aim Lamp

The selected lamp type is displayed across the top of the aim screen above the lamp pattern. The approximate Candela “CD” (brightness) value and the measurement of the aim-point are displayed at the bottom of screen, these numbers represent how far the aim is off at 25’ in front of the vehicle. The value is either in inches or centimeters depending on what has been selected in the main menu screen. Adjust lamp as indicated on the screen, if aim is correct, the aimer will beep and you will get an \*\*AIM OK\*\* message on the display. NOTE: The hash marks on the Horizontal Line represent 2 inches between the Lines at 25’. The hash marks on the Vertical Line represent 4” inches between lines at 25’ feet.



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If the printer option is installed, press the (PRINT) button (4). The operator can generate a printout of the current aim information.

Press the “NEXT” button (5). The aiming cycle for that lamp is complete and the aimer displays instructions to move the aimer to the driver side lamp.

**NOTE:** PRESSING THE “NEXT” BUTTON (5) ENERGIZES THE LAMP CENTERING LASER

## 5.5 POSITION AIMER TO LAMP (DRIVER SIDE)

At this screen the lamp alignment laser is energized and will continue to beep and the screen will display the message “LASER ON”. Roll the aimer in front of the **Driver Side** headlamp, place laser target sticker on lamp identifying the lamp optical center or fiduciary mark. Place laser on middle of sticker. Set the Brake Handle. Select the lamp type to be aimed LOW/HIGH/VOL/VOR/FOG. After the headlamp type is selected it will de-energize the laser.

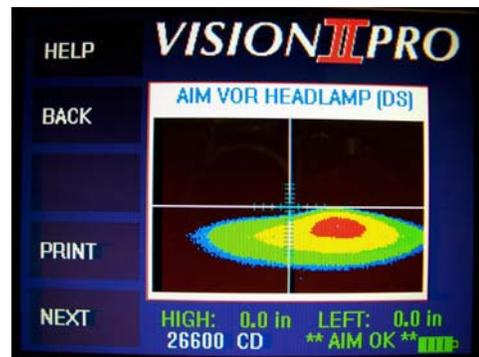
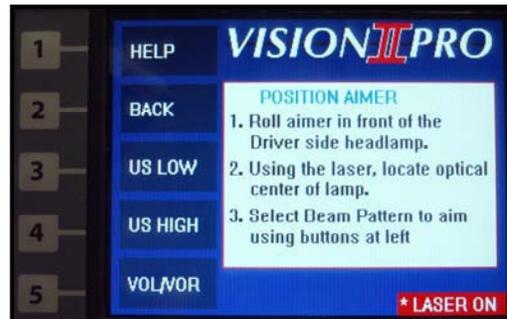
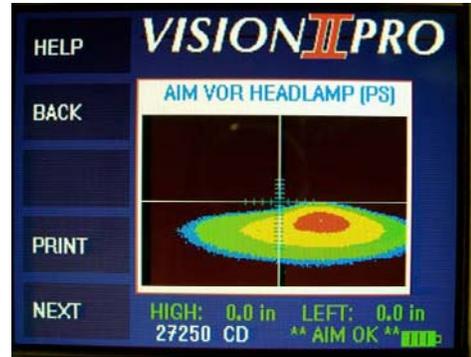
**AFTER CENTERING, REMOVE LASER LOCATOR STICKER**

### Aim Lamp

The selected lamp type is displayed across the top of the aim screen above the aim pattern. The approximate Candela “CD” (brightness) value and the measurement of the aim point are displayed at the bottom of screen, these numbers represent how far the aim is off at 25’ in front of the vehicle. The value is either in inches or centimeters depending on what has been selected in the main menu screen. Adjust lamp as indicated on the screen, if aim is correct, the aimer will beep and you will get an \*\*AIM OK\*\* message on the display.

If the printer option is installed, press the (PRINT) button (4). The operator can generate a printout of the current aim information.

Press the “NEXT” button (5) after aim has been completed and the aimer will display “AIM COMPLETE” push the “NEXT” button (5) again returns you to the “MAIN MENU”.



## **SECTION SIX**

### **6.1 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 Headlamps** - 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 the bottom of the 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, lasers and housings.

**Aimer Housing** - The portion of the aiming unit that contains the aimer lens, and aimer computer.

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

**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.

**Lamp Alignment Laser** - The laser mounted inside the aimer housing, to align to 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.

**Anti-Static Video Cleaner** - A spray cleaner 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 Wheels**- The wheels on the base of the aiming unit.

**Beam Pattern** - The image of light as it projects from a lamp.

**Candela**- The increment of measure for the brightness of a light.

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**Computer Image Processing** - The technology that allows the computer to analyze a video image which has been translated into a digital signal.

**Counterweight** - The counterweight, located inside the vertical Mast tube, is designed to balance the aim head for smooth movement and adjustment.

**Counterweight Cable** - The cable connecting the counterweights to the aim head side mount.

**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 of the vehicle the driver is normally seated in a vehicle built for the United States.

**Face of the Headlamp** - The outer lens of the lamp.

**Factory Calibration** - The tuning adjustment of the aiming unit at the manufacturing facility.

**Fiduciary Mark** - A manufacturer mark designating the optical center of a lamp.

**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.

**Headlamp Adjustment Screws** - The screws used to adjust the position of the headlamp. There is usually one horizontal and one vertical adjustment screw. VOL/VOR Lamps have no Horizontal adjustment.

**Help Screens** - The explanatory screens that are made available to describe each step of the setup or aiming process.

**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 up high on vehicle rear view mirror. Moving the laser up and down that centerline, while adjusting the Aimer and LCD Display. 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 calibration.

**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 unusable.

**LCD Display** - The display unit on top of the aimer housing.

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**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 seated in a vehicle built for the United States.

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

**Self Tests** - The software routine, run by the aimer CPU, which checks various functions of the computer and the video systems.

**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 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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## 6.2 EQUIPMENT MAINTENANCE

The Vision II Pro™ Image Processing Headlamp Aimer has been designed to provide a lifetime of care free performance. Maintenance is limited to occasional lubrication of the base wheels with light machine oil such as SAE 10w or similar. 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.

## 6.3 EQUIPMENT OPTICAL CALIBRATION

The Vision II Pro™ Aimer's main PC Board and Camera have been calibrated at the factory and require no further calibration on-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 an American Aimers Customer Service Representative at 1-877-343-7703 for corrective action.

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## 6.4 EQUIPMENT SPECIFICATIONS

### ELECTRICAL

Freq. Input: 60 HZ  
Power: 120 VAC

### MECHANICAL:

Height: 63 in.  
Size (Base): 24-1/4 in. X 22 in.  
Size (Aimer Head): 22 in. X 16 in.  
Head box weight 27 Lbs.  
Base box weight: 34 Lbs.  
Mast box weight: 36 Lbs.  
Total weight: 97lbs.

Track: 3 Sections (4 Ft. Each)

### AMBIENT:

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

## 6.5 REPLACEMENT PARTS

**Vision II Pro™:** Image Processing Aimer  
Order #**82002**  
Includes Floor Track & Battery Charger  
Ships in Three separate boxes

**Printer:** Optional Rechargeable Thermal Printer  
Order # **3-100-20**  
Includes Charger

**Dust Cover:** Optional Dust cover  
Order # **3-100-15**

**Battery Charger** Order # 3-100-75

**Battery Pack** Order # 3-100-25

**G2 Transit Kit** Order # 0414

**G2 Transit Target** Order # 4-004-12

**Headlamp Centering Targets**  
(Pkg. of 20) Order # 4-820-08

**Laser Centering Targets**  
(Pkg. of 100) Order # 4-820-09

**Thermal Printer Paper**  
(Pkg. of 4 rolls) Order # 0-000-00

To locate a distributor in your area, please contact us by toll free telephone: **877-343-7703** or Email: **contact@hopyaimers.com**.