User Manual

LOT-MASTER™

MODEL LM-100-AA

IMPORTANT: User must read and understand this User Manual before use of this product.

Naples, Florida USA 1-239-244- INVIS-A-BEAM LLC. **8555 www.invis-a-beam.com**

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INTRODUCTION

Thank you for purchasing this product from Invis-a-Beam LLC. This high quality product has been designed, built and tested to the upmost standards to perform accurately and reliably for many years of satisfied use. Please read and understand the contents of this User Manual before operating this product.

PACKAGE CONTENTS

(1) Receiving Infrared Head Unit "**A**"
(1) Transmitting Infrared Head Unit "**B**"
(1) RF Radio Receiver
(2) Upper Stand Assemblies
(2) Stand Poles
(2) Stand Bases
(1) Radio Receiver Lanyard with Clip
(1) 9V AC Power Charger
(1) Power Charger Splitter Cable
(2) AA Batteries
(1) White Dry Paint Marker
(1) 3/16" Hex Key
(4) Black Button Head Screws 5/16"-18, 3/4"L
(4) Black Split Lock Washers 9/16" OD
(2) Black Flat Washers 5/16" ID, 3/4" OD
(2) Stainless Steel Flat Washers 5/16" ID, 1" OD

(*See Figure 1 and Figure 2*)


RECEIVING INFRARED
HEAD UNIT "A"
TRANSMITTING INFRARED
HEAD UNIT "B"
UPPER STAND ASSEMBLIES
STAND POLES
STAND BASES
RADIO RECEIVER
LANYARD W/CLIP
RF RADIO RECEIVER
9V AC
POWER CHARGER
POWER CHARGER
SPLITTER CABLE
WHITE DRY
PAINT MARKER
DRY PAINT MARKER
AA BATTERIES

Fig. 1

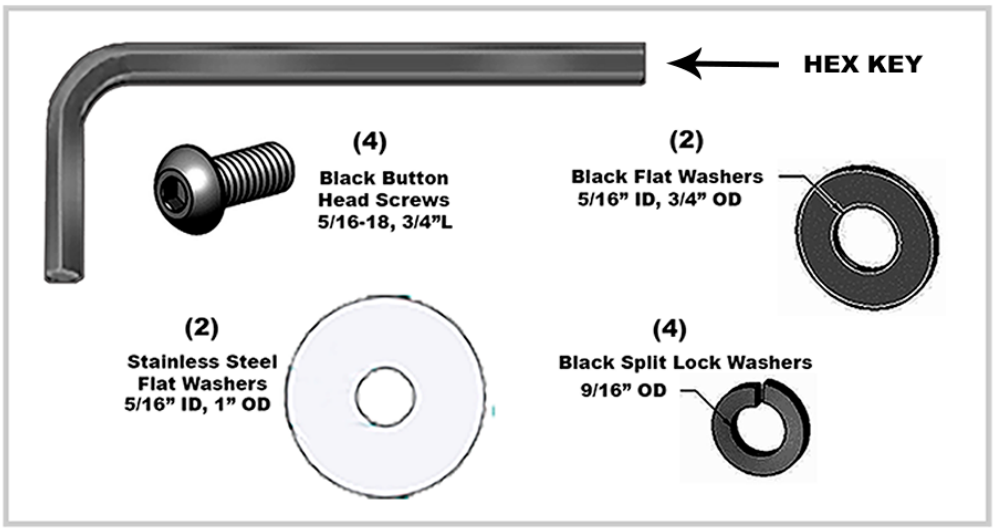
HEX KEY
(4)
Black Button
Head Screws
5/16-18, 3/4"L
(2)
Black Flat Washers
5/16" ID, 3/4" OD
(2)
Stainless Steel
Flat Washers
5/16" ID, 1" OD
(4)
Black Split Lock Washers
9/16" OD

Fig. 2

ASSEMBLY

UNPACKING

1. The product's contents come in two foam packaging trays. Remove the top piece of foam. Carefully remove all of the parts in the top tray before removing the top tray from the box. Next remove the empty top foam tray. Then carefully remove the contents of the bottom tray.
2. Inspect the contents carefully to make sure that no damage or breakage had occurred during shipping.
3. Do not discard the packaging material until you have inspected the product, identified all of the parts and successfully operated the product.
4. If any parts are missing or damaged, please contact Customer Service for assistance.

ASSEMBLING THE STANDS

LOCATE HEX KEY AND MOUNTING HARDWARE
(*See Figure 2)*

ATTACHING STAND POLE TO STAND BASE
(*See Figure 3)*

1. Holding a Stand Pole firmly in one hand, place a Stand Base upside down on top of the Stand Pole with the recessed cup over the end of the Stand Pole, rotating it until the pin in the cup mates up with the hole at the end of the Stand Pole.
2. With the bottom of the Stand Base facing upward, place a Stainless Steel Flat Washer and a Black Split Lock Washer over the mounting hole. Install a Black Button Head Screw through the two washers and into the mounting hole. Screw the Button Head Screw into the hole using the Hex Key until snug. Do not fully tighten!

Fig.3

ATTACHING THE UPPER STAND ASSEMBLY TO THE STAND POLE AND STAND BASE
(*See Figure 4)*

1. With the Stand Pole and Stand Base attached, place the Stand Base on a flat surface with the rubber bumpers down. Place an Upper Stand Assembly on the Stand Pole with the recessed cup on the bottom side over the end of the Stand Pole rotating it until the pin in the cup mates up with the hole at the end of the Stand Pole.
2. Place a Black Flat Washer and a Black Split Lock Washer over the mounting hole. Install a Black Button Head Screw through the two washers and into the mounting hole. Screw the Button Head Screw into the hole using the Hex Key until snug. Do not fully tighten!

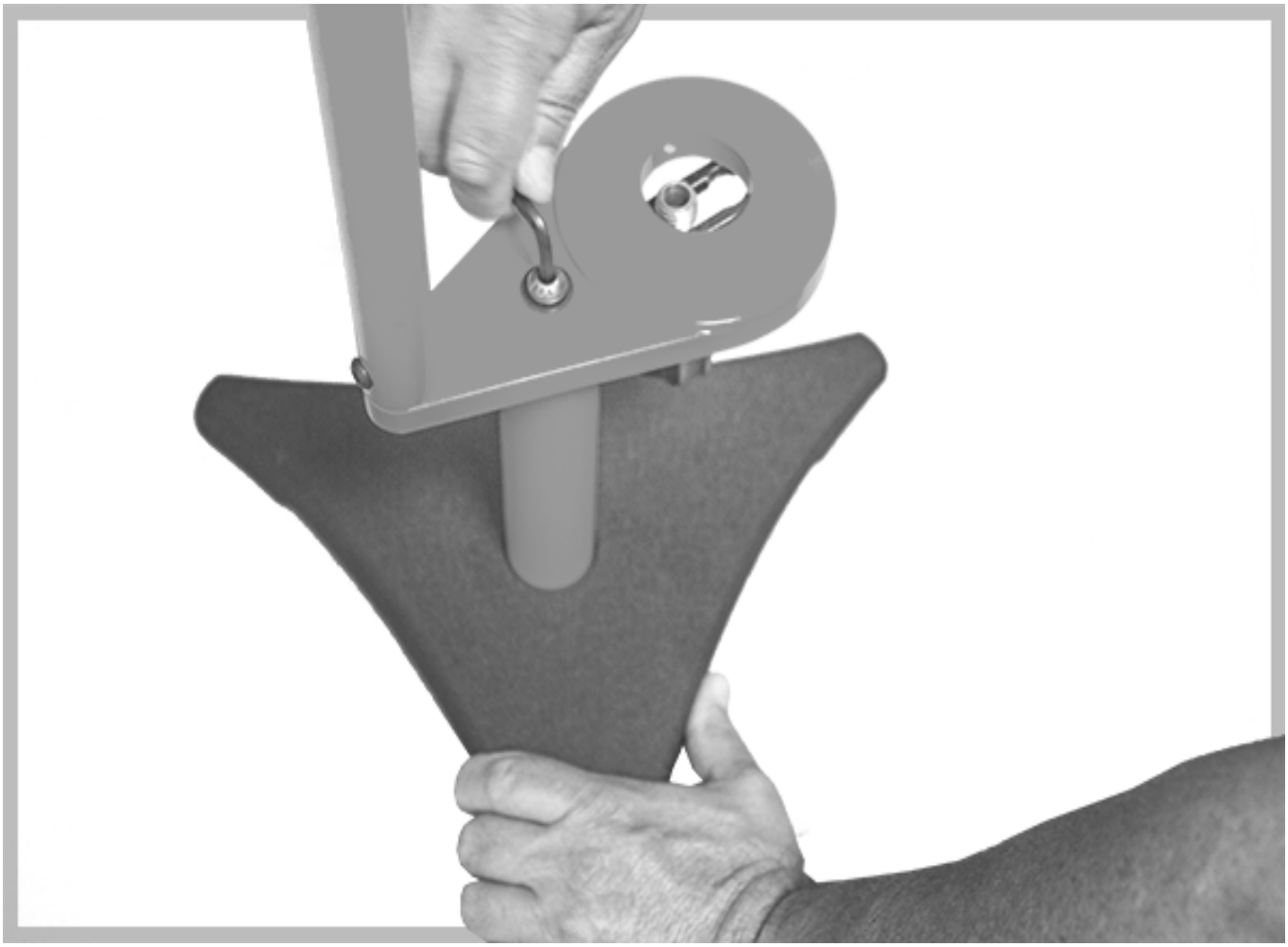

Fig.4

ALIGNING THE STAND ASSEMBLY
(*See Figure 5)*

1. Place the assembled Stand Assembly on the floor. Looking directly over the top of the Stand Assembly with the mounting screws snug and not fully tightened, rotate the handle of the Stand Assembly until the handle is aligned with the front tip of the Stand Base.
2. Without disturbing the alignment, fully tighten the mounting screw on the Upper Stand Assembly with the Hex Key.
3. Carefully turn the stand upside down. Firmly holding it in one hand, fully tighten the mounting screw at the bottom of the Stand Base.

4.Place the Stand Assembly on the floor to check its alignment. If not correctly aligned, loosen both mounting screws and repeat this procedure until aligned correctly.

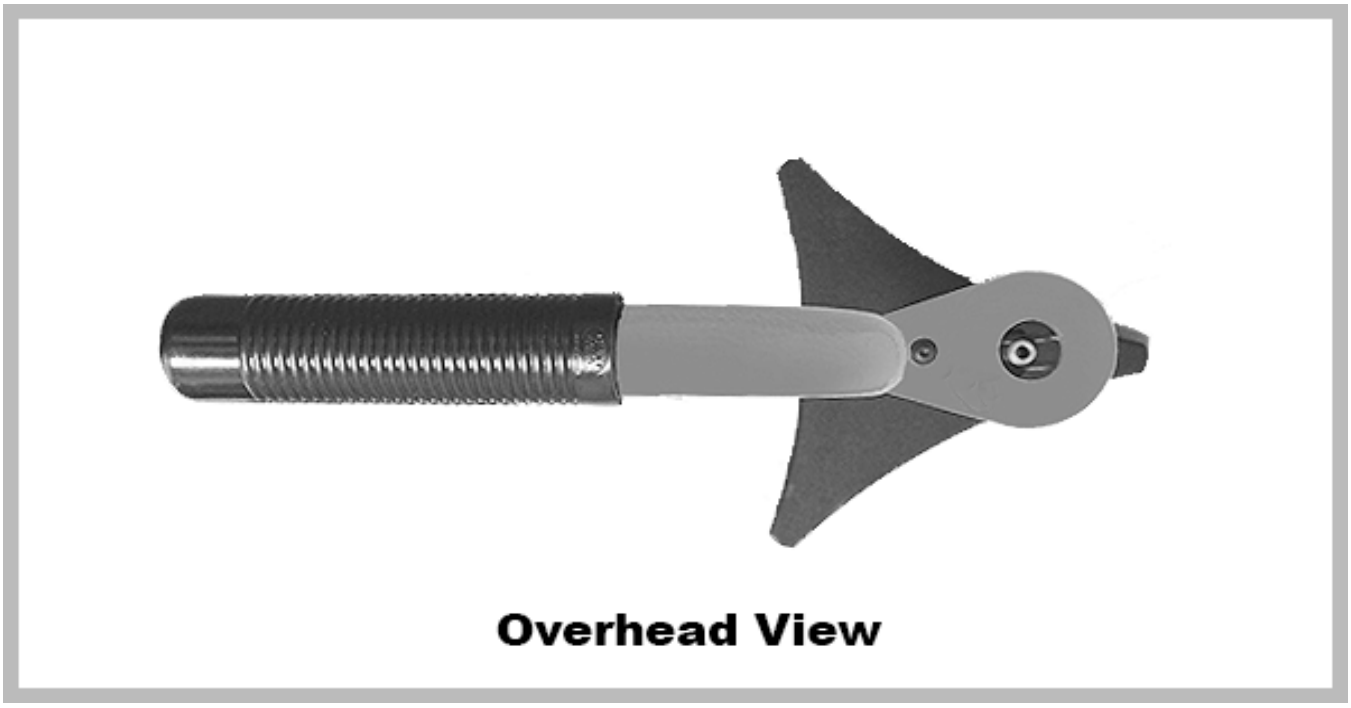

Fig.5

REPEAT PREVIOUS PROCEDURES FOR THE REMAINING STAND ASSEMBLY.

ATTACHING INFRARED HEAD UNITS TO STAND ASSEMBLIES (*See Figure 6)*

1.Firmly holding one of the Infrared Head Units, in one hand, place the base of the Head Unit on top of the dome of the Stand Assembly with the Head Unit Lenses facing away from the Stand Handle.
2.With the other hand, align the 5/8" Center Screw that is located in the center hole of the Dome of the Stand Assembly with the hole located on the bottom side of the Infrared Head Unit base. Tighten the Center Screw Knob by hand until the Infrared Head Unit is firmly in place.

3.Repeat this procedure with the remaining Infrared Head Unit and Stand Assembly.

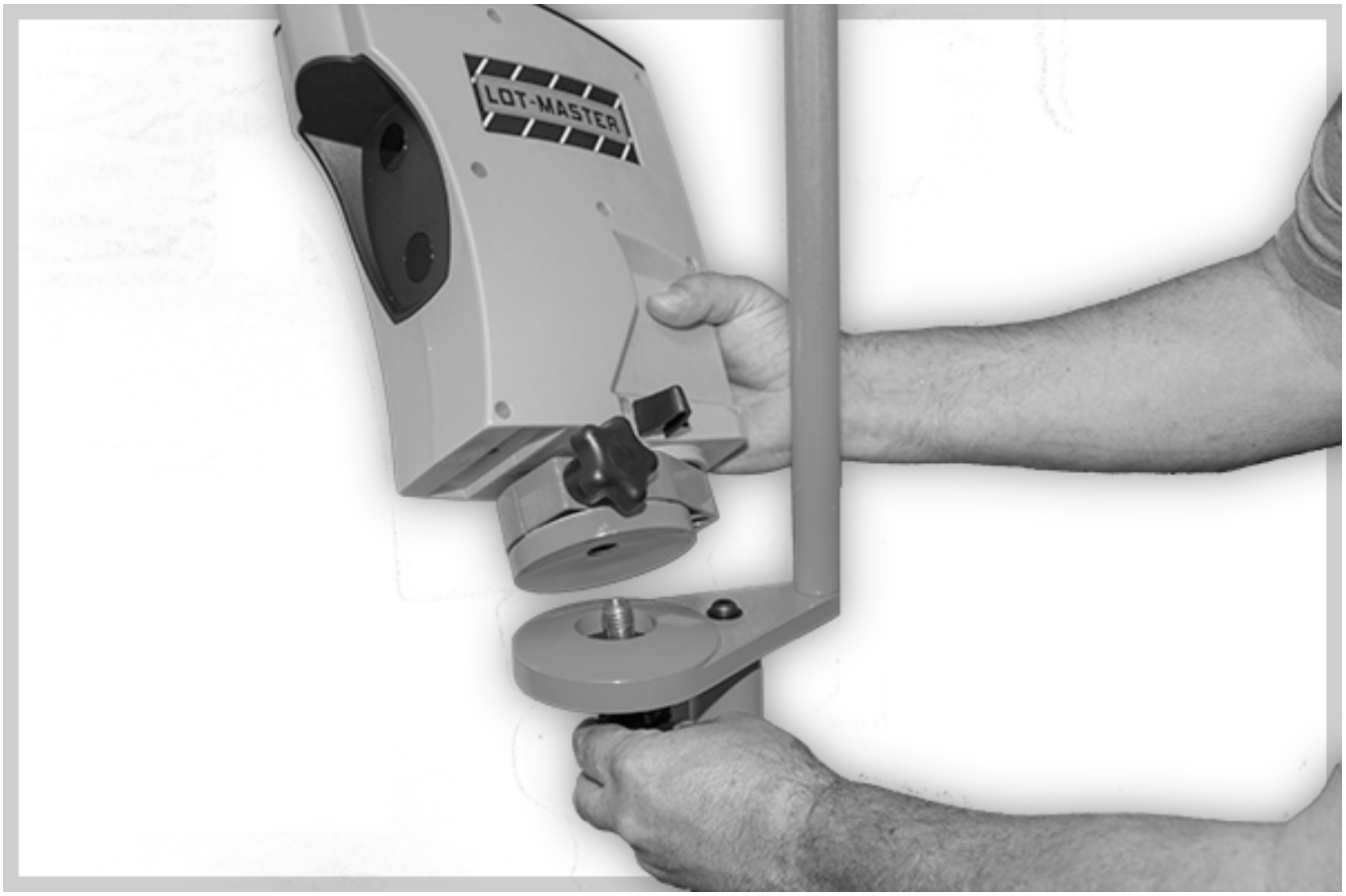

Fig.6

ASSEMBLING THE RF RADIO RECEIVER

(*See Figure 7)*

1.Remove the battery door located on the backside of the RF Radio Receiver.
2.Insert the 2 AA Batteries into the battery compartment, observing the positive (**+)** and negative (**–)** markings indicated in the battery compartment.
3.Replace battery door.

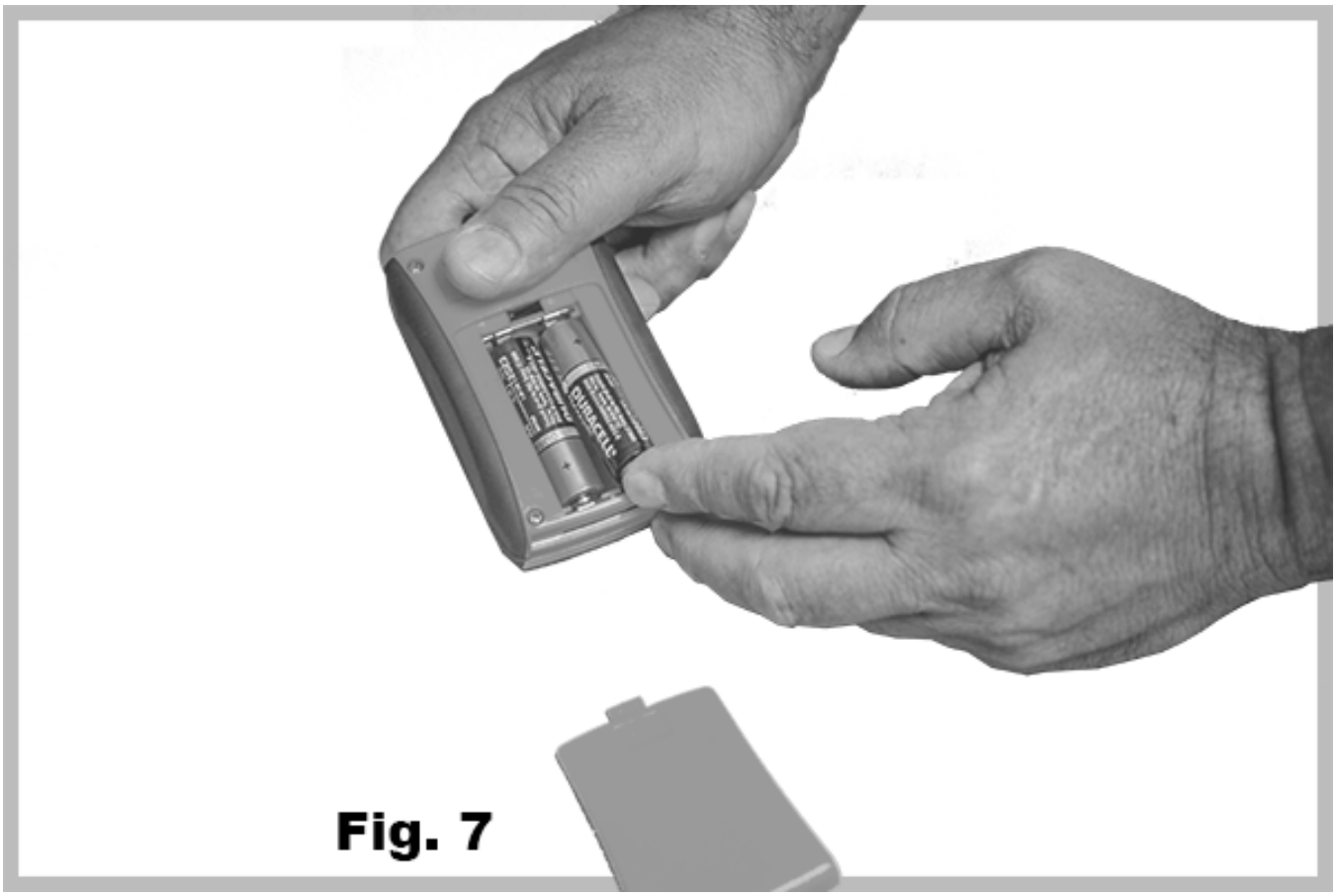

Fig. 7

4.Attach the Lanyard to the RF Radio Receiver by clipping the Lanyard to the ring on the top of the Radio*.*

OPERATION

CHARGING THE INFRARED HEAD UNITS

<u>Charge the Infrared Head Units for 14 hours before the first use.</u>

LOCATE 9V AC POWER CHARGER AND POWER CHARGER SPLITTER CABLE
(*See Figure 8)*

Fig.8

CHARGING PROCEDURE
(*See Figure 9)*

1. Plug the AC Power Charger into an AC wall outlet.
2. Insert the round male barrel end of the AC Power Charger charging cord into the female end of the Power Charger Splitter Cable.
3. Insert the male ends of the Power Charger Splitter Cable into the Power Jacks located at the bottom of each of the Infrared Head Units.

Fig.9

When the Infrared Head Units are charging, a Red LED indicator on the top of the Infrared Head Unit will illuminate. If the Infrared Head

Unit is turned on at the time of charging, the LED indicator will be a slight orange color. (*See Figure 10*)

When an Infrared Head Unit is powered up, a solid Green LED on the indicator panel will indicate that the Unit is on and ready for use. A flashing Green LED indicates the internal battery power is low and needs to be recharged. For reliable readiness of use, it is recommended to keep the units connected to the charger when not in operation. The AC Power Charger can be constantly plugged into the Infrared Head Units without damage to the internal battery packs.

When the internal battery packs inside the Infrared Head Units are completely discharged, a 14-hour charge will be required.

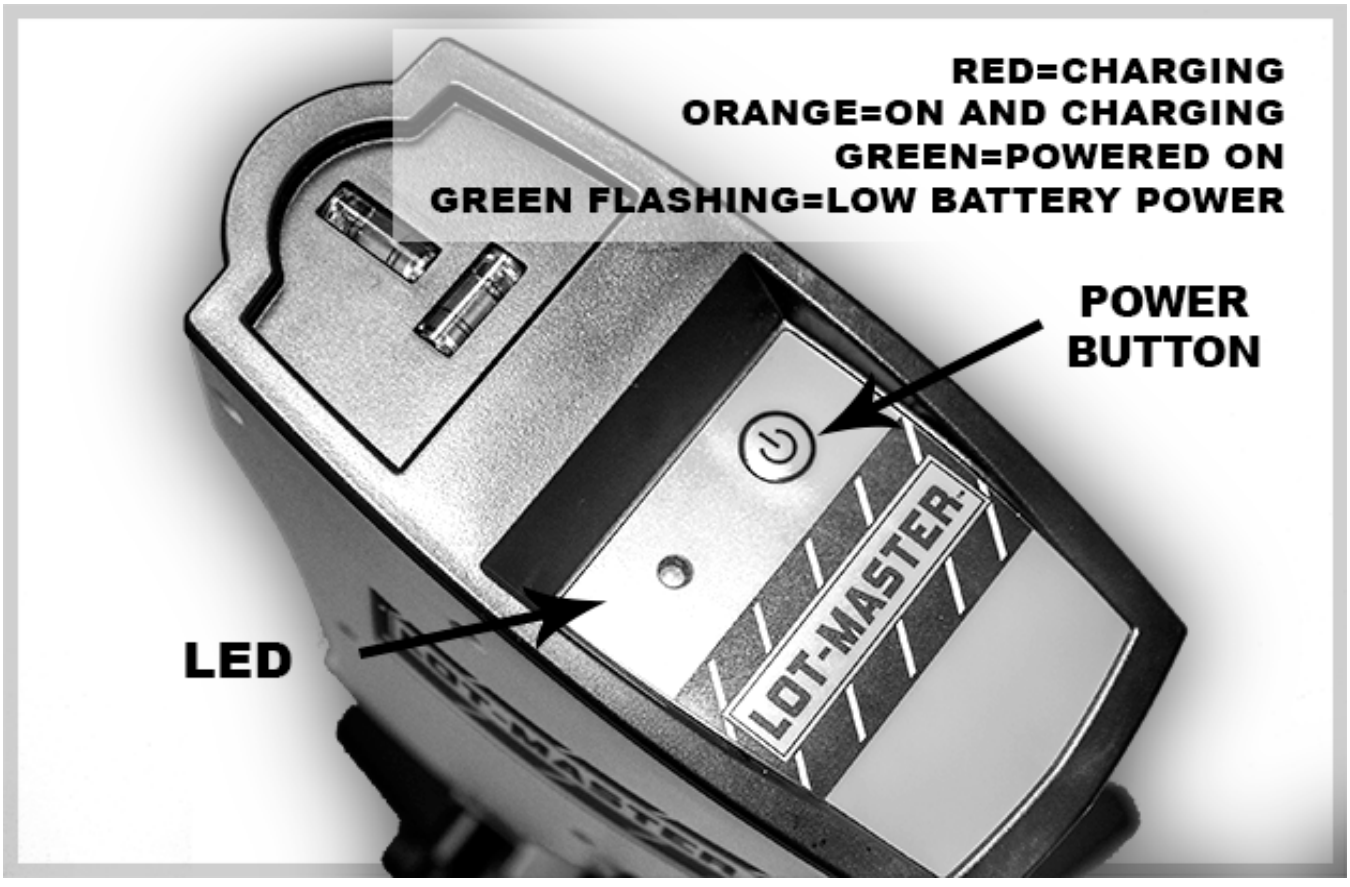

Fig.10

POSITIONING THE INFRARED HEAD UNITS FOR ALIGNMENT

MARKING ALIGNMENT ROW
(*See Figure 11)*

This Product is designed to be used on flat, level, hard surfaces.

1. Determine a line of reference for the objects that you will be aligning. This will be the point to point path of the invisible infrared beam. Keep in mind that the distance between the two points must be at least 20 feet (6 meters) and no more than 330 feet (100 meters).
2. The line may be established using plain sight or measuring from reference points such as parking lot lines, curbs, walls, etc.
3. Once determined, mark the endpoints of the line. **For a permanent mark use the Dry Paint Stick**. These two endpoints will be used to accurately position the two Infrared Head Units, as detailed in the following section "**PAIRING THE INFRARED HEAD UNITS"**.

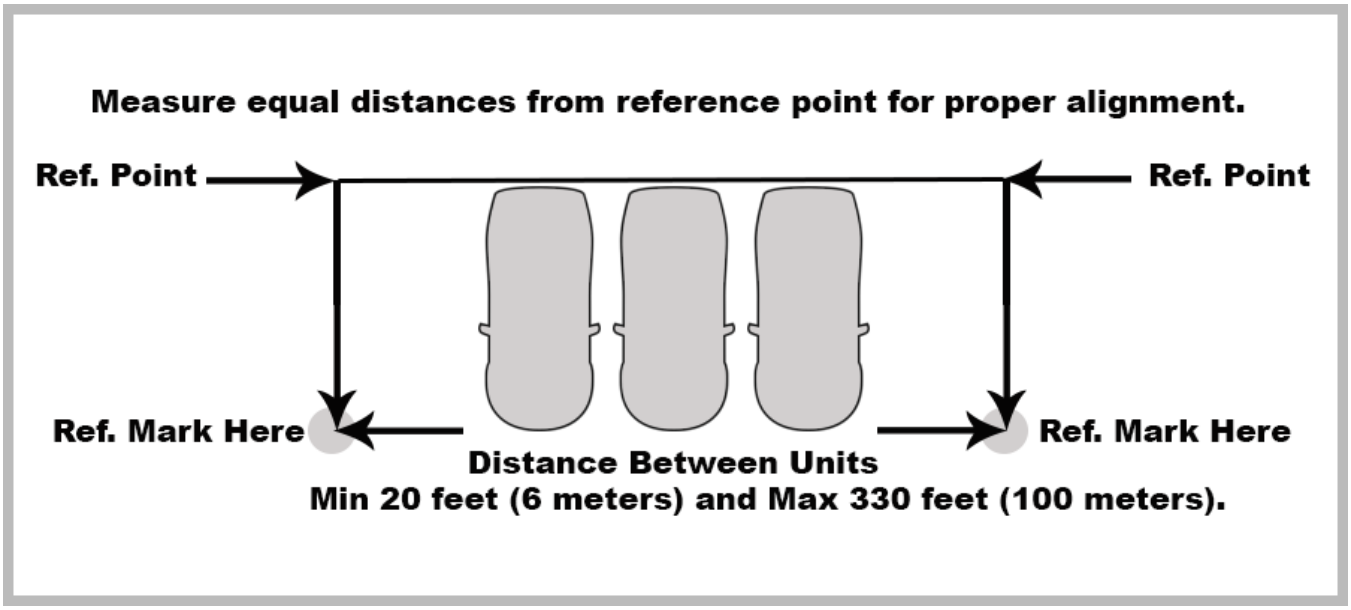

Fig.11

PAIRING THE INFRARED HEAD UNITS

1. Determine the height setting of the Infrared Head Units. There are 5 height settings on the Infrared Head Units. A vertical adjustment trigger is located on the bottom, left side of each Infrared Head Unit. By pulling the trigger back, this will release the locking mechanism and allow the housing height to be adjusted. (*See Figure 12)*

Fig.12

2. This product is designed for aligning objects in the range of: minimum height of 15.5" to a maximum height of 24.75". If the objects to be aligned have a uniform and flat vertical profile spanning this range, the height adjustment may not be necessary

at all. In other situations and most typically, adjustments will need to be made. To determine the correct height adjustment, place one of the Infrared Head Units in front of the object to be aligned; such as a bumper, tire, etc. Raise the Infrared Head Unit until the center of the two lenses located in front of the Head Unit are close to the middle of the object. Set the remaining Infrared Head Unit to the same height setting. (*See Figure 13).*

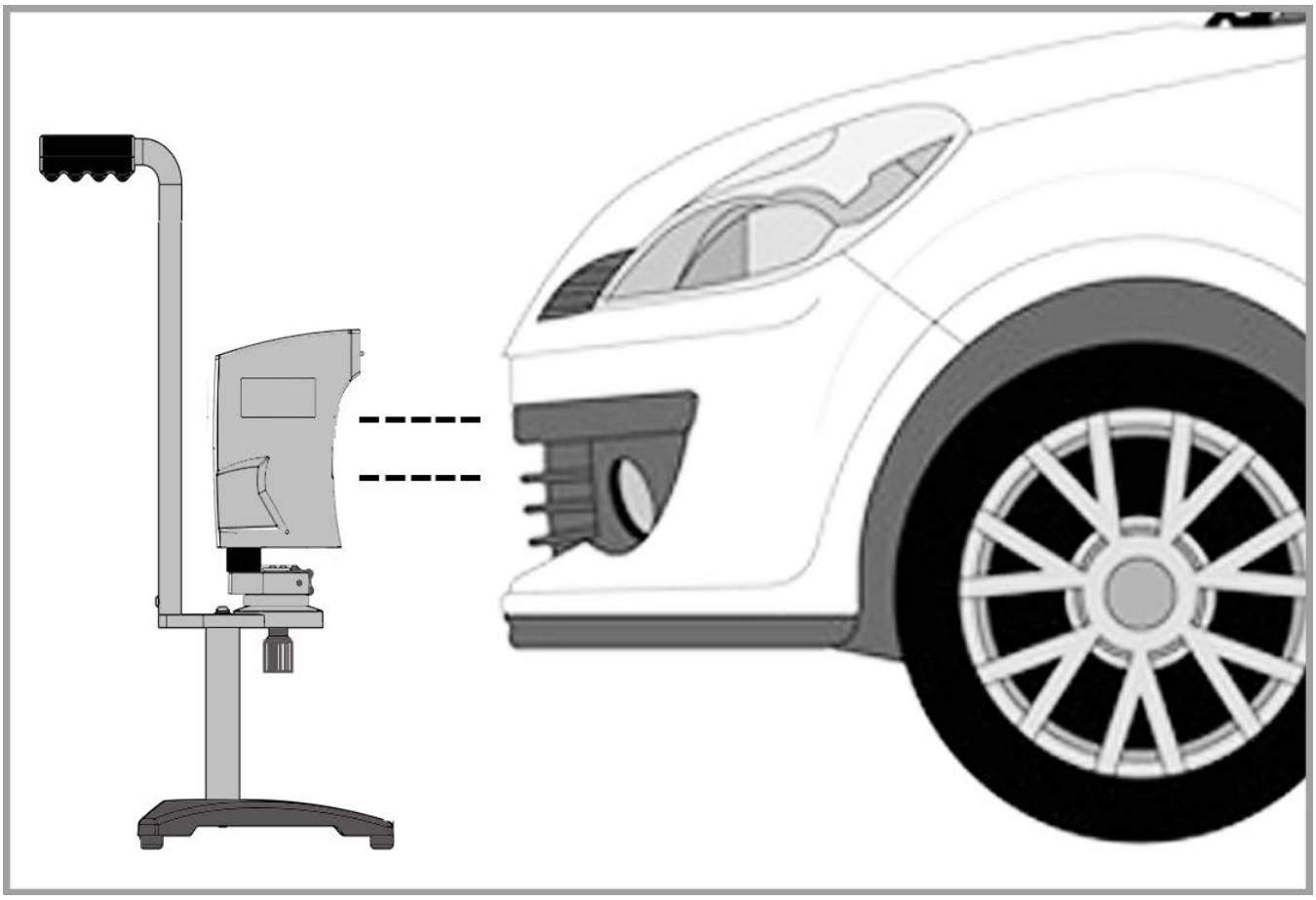

Fig. 13

3. When adjusting for vertical height on different size vehicles in the same row, first set the vertical height for one size vehicle such as passenger cars and align those vehicles. Then set the vertical height for another size vehicle such as SUVs and then align those vehicles.

4. Locate the Receiving Infrared Head Unit “A” which can be identified by the Amber LED pairing indicator mounted in the upper front section of the housing also marked with a letter “A” on the bottom of the housing.
5. Place the front tip of the Stand Base on the pre-determined starting point. Loosen the Center Screw that mounts the Stand to the Infrared Head Unit and rotate it around the Dome Head until level, as indicated by the two bubble levels on top of the Head Unit. When level, tighten the Center Screw. (*See Figure 14)*

Fig.14

6. Power the unit up by pressing the on/off button located on the indicator panel on the top of the Infrared Head Unit. A Green LED will light up when power is on. However, if the batteries are low, the indicator will be flashing Green.(*See Figure 10*)
7. Loosen the 5 point knob that locks the side to side rotation, located on the bottom left side of the Infrared Head Unit below the

housing. Rotate the Infrared Head Unit where the lenses are aiming at the ending point of alignment. Once visually pointed to the end point, tighten the 5 point knob. The Infrared Head Unit “A” is now set. (*See Figure 15*)

Fig.15

8. Locate the Transmitting Infrared Head Unit “B” which will have the letter “B” marked on the bottom of the housing. This Unit **will not have** an LED mounted in the upper front section of the housing.

9. Place the front tip of the Stand on the pre-determined ending point and repeat steps 3 and 4.
10. Loosen the 5 point knob that locks the side to side rotation. Rotate the Infrared Head Unit where the lenses are aiming at the Infrared Head Unit “A”. Slowly rotate the Infrared Head Unit “B” from side to side until the Amber LED on Infrared Head Unit “A” lights up and is

continually on. Tighten the 5 point knob. The two Infrared Head Units are now paired. (*See Figure 16).*

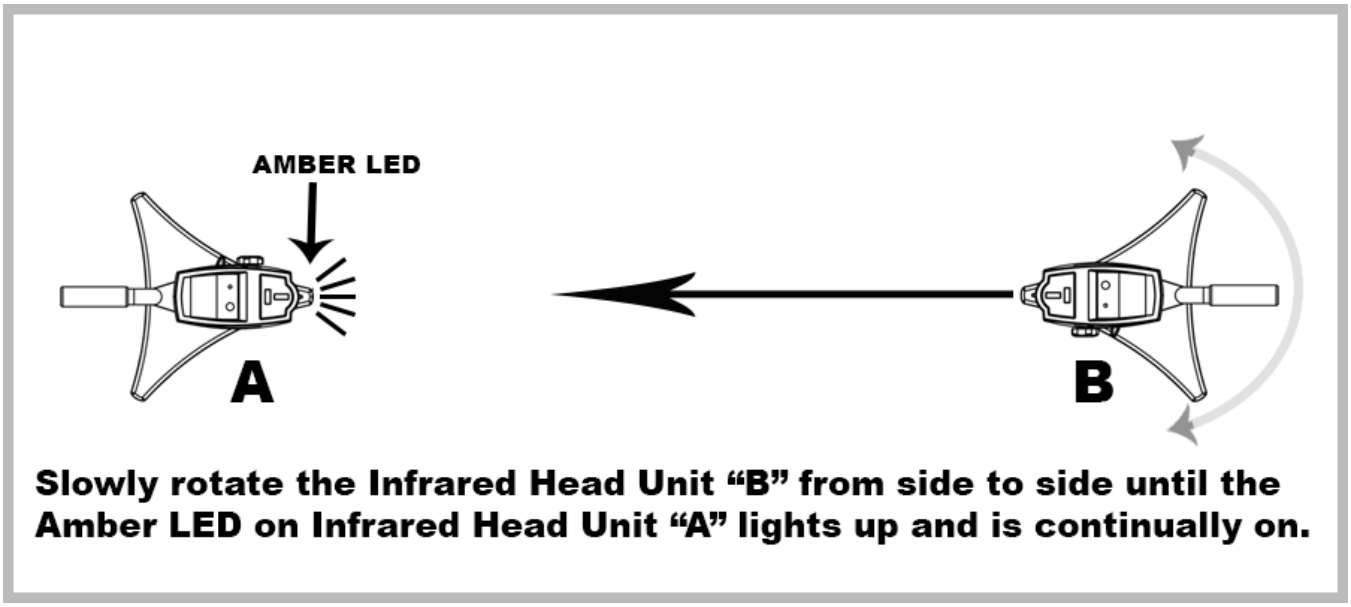

Fig.16

Note: If trying to pair the Infrared Head Units on a surface with a slight grade, Infrared Head Unit "B" may require a slight forward or backward tilt or a slight height adjustment depending on the type of grade. This product was not intended for use on graded surfaces, but may be adaptable for use in some cases.

RF RADIO RECEIVER OPERATION

(*See Figure 17)*

1. Turn power on by pressing the on/off button located on the front panel of the Radio Receiver. The Green LED will indicate the power is on. The Green LED will blink when the batteries are low and need to be replaced.
2. When the infrared beam is broken between the two Infrared Head Units, a tone will sound and the two Red LED indicators will illuminate.
3. The tone volume can be adjusted or completely turned off by pressing the up and down arrows on the front panel.

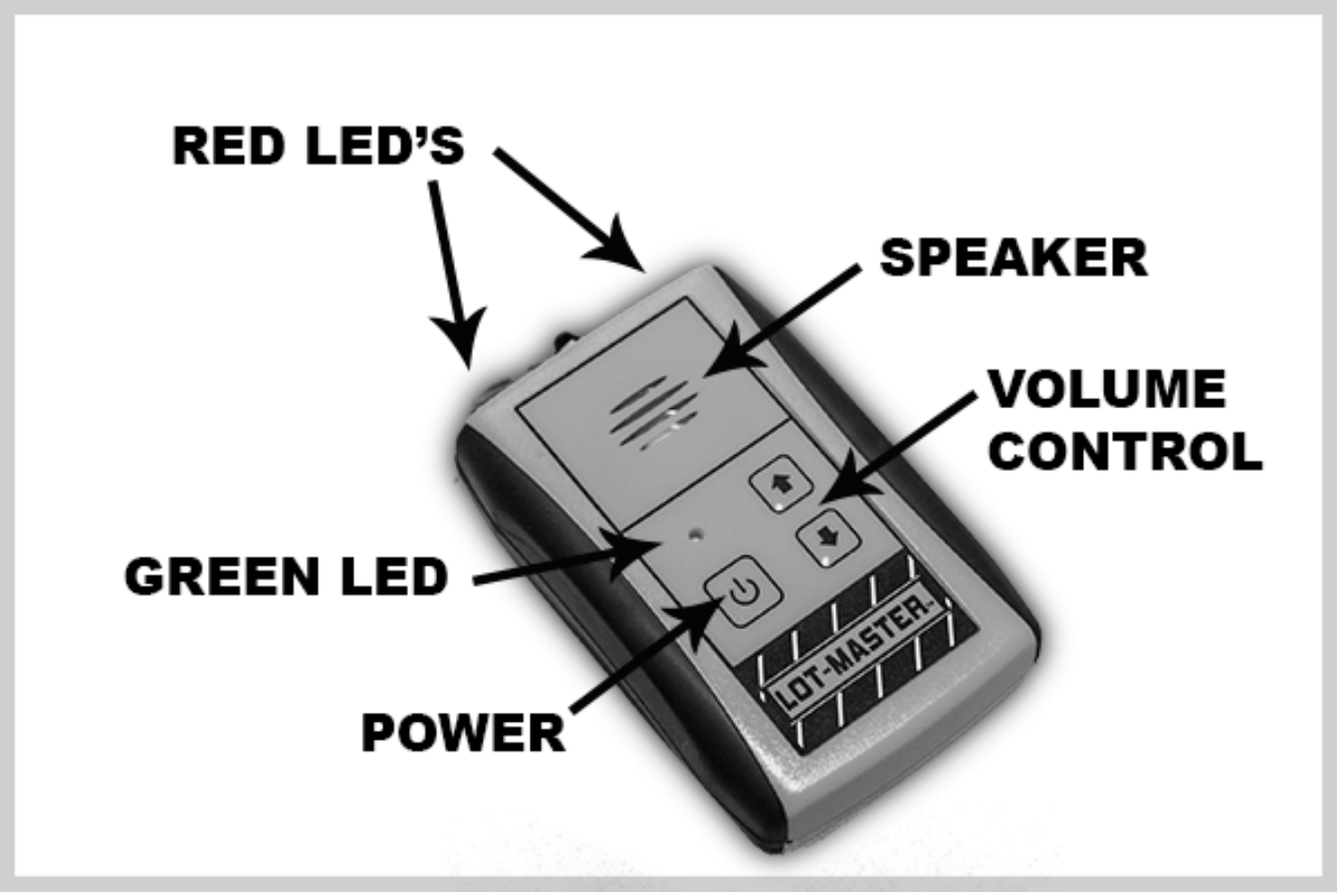

Fig.17

ALIGNING OBJECTS

(*See Figure 18)*

1. Move the object to be aligned toward the invisible infrared beam that has been established between the two Infrared Head Units. Once the object crosses the beam, a tone, if enabled will sound and the Red LED indicators will illuminate on the RF Radio Receiver. At this moment of detection, stop the forward motion of the object. Then, very slowly reverse the direction of the object until the beam becomes unblocked, the tone stops and the Red LED indicators are off. The object is now aligned.

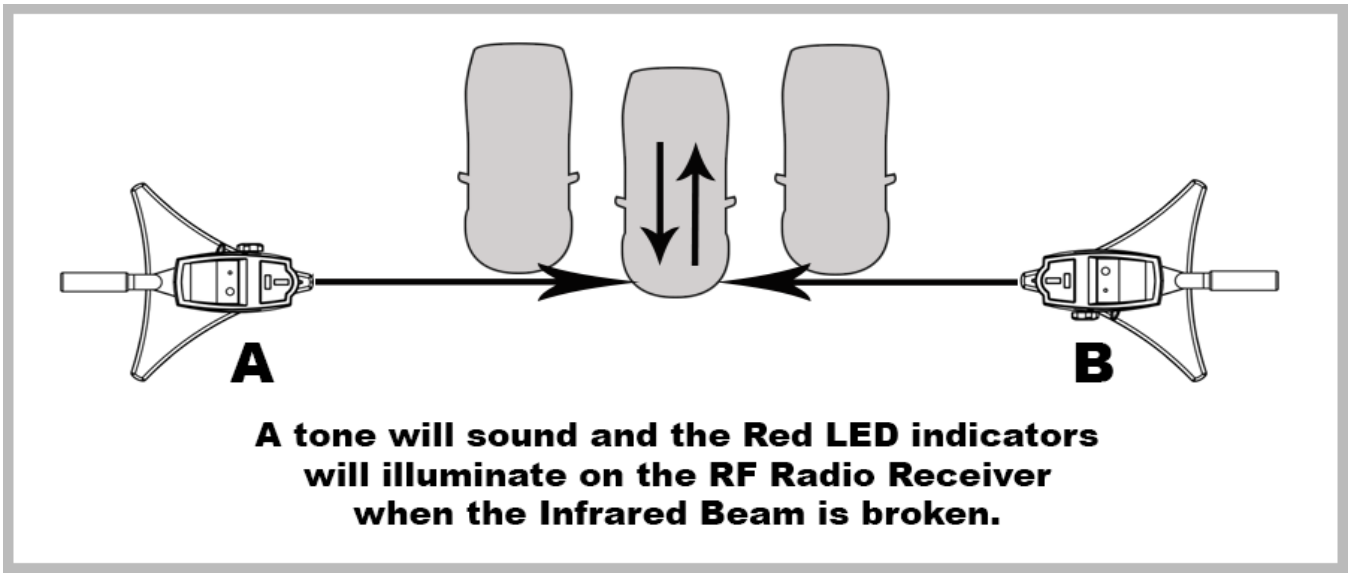

Fig.18

Note: Aside from using the RF Radio Receiver to determine when the beam is broken or not, the Amber LED on the Infrared Head Unit "A" will stay on when the beam is continuous and will go off when the beam is broken.

2. When aligning rolling objects such as cars, trucks, RVs etc. it is best to set the parking break before removing your foot off the break peddle to prevent the vehicle from rolling after alignment.

USING THIS PRODUCT FOR A SAFETY BARRIER

1. Follow the same instructions as described above in this section except for the measuring of the starting and ending points.
2. Determine the starting and ending points by placing the Infrared Head Units in front of the object or objects you are protecting. For example: If the Infrared Head Units are placed in front of a row of loaded pallets in a warehouse setting, a forklift operator can wear the RF Radio Receiver around his neck and if the safety beam is broken, the operator will be warned with a tone and the Red LEDs will illuminate.

FOR MORE INFORMATION ON THE SETUP OF THIS PRODUCT GO TO THE INSTRUCTION VIDEO LINK AT WWW.LOT-MASTER.COM/SUPPORT.

WARNINGS

- When using this product while sitting in a motor vehicle, check for pedestrians and objects around you.
- When using this product, make sure the Infrared Head Units are not in the path of motor vehicle traffic such as cars, trucks, RVs, buses, forklifts, heavy equipment, etc.
- Do not look directly into any of the indicator LEDs installed in any part of this product at a close range for a long period of time.
- Do not submerge in water.
- Do not use this product in raining, icing or snowing conditions.
- Do not leave this product in freezing or extreme heat for long periods of time.
- Do not use this product in extremely windy conditions to avoid having the product blow over, potentially causing harm or damage to objects nearby or to the product itself.
- Do not use abrasives, harsh cleaners or chemicals when cleaning this product.

- Opening the housings of the Infrared Head Units or RF Radio Receiver may cause damage to the product and will void the warranty.
- Do not modify this product in any way. Doing so will void the warranty.
- Do not replace the internal battery pack in either Infrared Head Unit with any battery pack other than the battery pack specially designed for this product.
- Do not transport this product without properly protecting the Infrared Head Units from shock or impact.
- This product is designed to be used on flat, level, and hard surfaces. Using this product on surfaces other than those described above may cause instability of the Infrared Head Units, potentially causing damage to objects nearby or to the product itself if it were to tip over. Additionally, use in this manner may create difficulty when trying to pair the Infrared Head Units.
- NiCd batteries that fail and need to be replaced and disposed of, should be recycled. Disposal of NiCd batteries in the municipal waste system is prohibited by most state and municipality laws. Check with local solid waste officials for details concerning recycling options and proper disposal.
- For disposal of RF Radio Receiver AA batteries, follow the battery manufactures' guidelines for proper disposal.
- Never dispose of any batteries in fire because they could explode.

PRODUCT CARE

To avoid damage to the optic lenses, clean by wiping with a soft, damp cloth. Do not use abrasives, harsh cleaners or chemicals to clean any part of the product. If any part of the

product becomes wet, wipe off immediately with a soft, absorbent cloth. Do not store in freezing or excessively hot temperatures.

TROUBLE SHOOTING

- **Green LED does not light up on the control panel of one of the Infrared Head Units.**
  1.Battery is fully discharged and needs to be fully charged.
  2.Internal problem. Call Customer Service.

- **Green LED is flashing on the control panel on one of the Infrared Head Units.**
  1.Battery power is running low and needs to be charged.

- **The Red LED on the control panel of one of the Infrared Head Units does not light up when charging.**

1.Check the connections from the Power Charger Splitter Cable to the power jack located on the bottom of the housing and from the Power Charger Splitter Cable to the Charging Cable from the AC Power Charger.

2.Make sure that the 9V AC Power Charger is plugged into the wall and the Green LED is illuminated on the AC Power Charger. If the Green LED does not illuminate, check the AC power source. If the AC power source is known to be good the AC Power Charger is defective and you will need to call Customer Service for a replacement.

3.If the Green LED on the AC Power Charger is on and the Red LED on the control panel is still not on, try removing the Power Charger Splitter Cable from the AC Power Charger's Cable and run the cable from the AC Power Charger directly to the power jack on the bottom of the Infrared Head Unit. If the Red LED illuminates, then the Power Charger Splitter cable is defective. Call Customer Service for a replacement.

4. *After checking the above steps 1, 2 & 3 and the Red LED still does not illuminate, there is most likely an internal problem and you will need to call Customer Service.*

- **Both Red LEDs on the control panels on the Infrared Head Units do not light up when charging.**
  1. *Check the connection from the Power Charger Splitter Cable to the power cable coming from the 9V AC Power Charger.*
  2. *Make sure that the 9V AC Power Charger is plugged into the wall and the Green LED is illuminated on the AC Power Charger. If the Green LED does not illuminate, check the AC power source. If the AC power source is known to be good, the Power Charger is defective and you will need to call Customer Service for a replacement.*
  3. *If the Green LED on the AC Power Charger is on and the Red LEDs on the control panel are still not on, try removing the Power Charger Splitter Cable from the AC Power Charger's Cable and run the cable from the AC Power Charger directly to one of the power jacks on the bottom of an Infrared Head Unit. If a Red LED illuminates, then the Power Charger Splitter cable is defective. Call Customer Service for a replacement.*
  4. *After checking the above steps 1, 2 & 3 and the Red LEDs still do not illuminate, call Customer Service.*

- **Green LED does not light up on the RF Radio receiver.**
  1. *Batteries are fully discharged and need to be replaced.*
  2. *Internal problem. Call Customer Service.*

- **Green LED is flashing on the RF Radio Receiver.**
  1. *Battery power is running low and batteries need to be replaced.*

- **Volume control does not work on the RF Radio Receiver.**
  1. *Check to make sure the power is on.*
  2. *Internal problem. Call Customer Service.*

- **Tone does not sound and Red LEDs do not illuminate when the infrared beam is broken.**

1. *Check to make sure the RF Radio Receiver is powered up.*
2. *Break the infrared beam and see if the Amber LED on the Infrared Head Unit "A" goes off. If the Amber LED goes off there is an internal problem with the RF Radio Receiver and you will need to call Customer Service.*

- **The two Infrared Head Units will not pair up with each other and the Amber LED on the Infrared Head Unit "A" will not illuminate.**
  1. *Check to see if both Infrared Head Units are powered up.*
  2. *Check for unintended obstructions to the path of the beam.*
  3. *Check the appearance of the lenses on both Infrared Head Units. If necessary clean by wiping with a soft, damp cloth.*
  4. *Try pairing the two Head Units at a close distance of about 20 feet. If the two Head Units pair up and the Amber LED illuminates, carefully read the* ***POSITIONING THE INFRARED HEAD UNITS FOR ALIGNMENT*** *section of this User Manual and try again. If the Infrared Head Units still do not pair up, there is most likely an internal problem with one of the Infrared Head Units and you will need to call Customer Service.*

- **IF THERE ARE ANY OTHER TECHNICAL PROBLEMS WITH THIS PRODUCT THAT IS NOT MENTIONED ABOVE, PLEASE CALL CUSTOMER SERVICE.**

ONE YEAR LIMITED WARRANTY

Invis-a-Beam LLC warrants this product to be free of defects in parts and workmanship for **one year** from date of purchase. If it becomes necessary to return the product for service or replacement during the warranty period, contact the Customer Service Department by

email at info@invis-a-beam.com or call 239-244-8885 for a return authorization. A Return Authorization Number must be issued before any product can be returned. This warranty does not apply to defects resulting from action of the user such as abuse, dropping, water damage, heat damage, improper maintenance, chemical damage, modifications or opening of the housings. In the event that a product is sent back to Invis-a-Beam LLC for a warranty claim and is found to have damage due to one or more of the un-warrantable conditions listed above, the customer that sent the product back will be charged for reimbursement of the return shipping charge, out going shipping charge and for any service performed to the returned product. Invis-a-Beam LLC specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Invis-a-Beam LLC liability is limited to repair or replacement of the product only. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

PRODUCT REGISTRATION

If you have **purchased our product directly from our website**, the product will be automatically registered. If you have **purchased our product from a distributor, third party website or a retail store**, you must register the product by visiting our website at www.invis-a-beam.com and go to the “Product Registration” link.

PARTS AND ACCESSORIES

For replacements parts and available accessories go to:

shop.invis-a-beam.com.

CUSTOMER SERVICE

For Technical Support and Product Information contact us by the following:

Mail: Invis-a-Beam LLC
4707 Enterprise Ave., Suite 2
Naples, Florida 34104 USA

Telephone: 239-244-8885

Fax: 239-244-8881

Email: info@invis-a-beam.com

TECHNICAL SPECIFICATIONS

Operating Temperature Range:	0 - 100□F (-18 - 38□C)
Storage Temperature Range:	0 - 100□F (-18 - 38□C)
R Head Unit Charging Temperature Range:	32 - 100□F (0 - 38□C)

Total Shipping Weight:	26.4 Lbs. (12 Kg)
Individual IR Head Unit Weight, Fully Assembled "A" or "B":	9.8 Lbs. (4.4 Kg)
RF Radio Receiver Weight, Fully Assembled, W/Batteries:	5 oz. (0.6 Kg)
IR Head Unit Pairing Range:	20 – 330 ft. (6 – 100 m)
Precision Over Full Pairing Range:	± 1/8 in. (± 3.2 mm)
Minimum Width of Objects to be Aligned:	1 in. (2.5 cm)
IR Head Unit Pairing Height Range:	15.5 – 24.75 in. (39.4 – 62.9 cm)
IR Head Unit Maximum Height, Highest Position:	28.25 in. (71.8 cm)
IR Head Unit Internal Battery	4.8V, 700mAh, Rechargeable NiCd Pack
Receiving IR Head Unit "A" Run Time, Fully Charged, Typical:	20hrs.
Transmitting IR Head Unit "B" Run Time, Fully Charged, Typical:	30 hrs.
AC Power Charger:	Input: 100 – 240 VAC, 50/60 Hz, 500 mW, Output: 9 VDC, 500 mA
RF Radio Receiver Range:	0 – 330 ft. (0 – 100 m)
RF Radio Receiver Batteries:	1.5V Alkaline AA (LR6), 2 Cells
RF Radio Receiver Run Time, New Batteries, Typical:	50 hrs.
RF Frequency of Operation:	915 MHz

DISCLOSURES

- **Occasional disruption to the Infrared and Radio signals do to interference from other sources may cause a deviation in accuracy and range.**

- **The Minimum Width of the Objects to be Aligned may increase with materials other than metal.**

FCC WARNINGS

CAUTION: Invis-a-Beam LLC is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

RADIO AND TELEVISION INTERFERENCE

This equipment has been tested and found to comply with the limits, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- **Reorient or relocate the receiving antenna.**

- **Increase the separation between the equipment and the receiver.**

- **Connect the equipment into an outlet on a circuit different from that to which the receiver is**

connected.

- **Consult the dealer or an experienced radio/TV technician for help.**

You may also find helpful the following booklet, prepared by the FCC: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402.

Changes and Modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commissions rules.

Patent Pending
Visit our website at www.invis-a-beam.com.

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