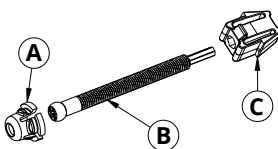




### PRE-INSTALLATION INFORMATION

<b>Estimated Time</b>	30 minutes
<b>Tools Needed</b>	Philips Screwdriver
<b>In the Box</b>	(x1) Model 90 Low Beam Headlight (x1) Wire Harness
	<b>A</b> (x3) Adjuster Ball Socket <b>B</b> (x3) Adjustment Rod <b>C</b> (x1) Adjustment Nut
<b>Wire Functions</b>	Black = Ground Red = Power
<b>Input Voltage</b>	12-24V DC 10-31V DC ( <i>Symmetrical Low Beam Only</i> )
<b>Operating Voltage</b>	10.5-38V DC

### Regulatory Compliance



### Pre-Installation Guidelines

1. Read all safety notes and mounting guidelines before installing the product. Verify that all parts listed under "In the Box" are present and complete.
2. Inspect the product for damage. **DO NOT** install the product if there is any damage. Contact the authorized retailer where you purchased it to initiate a warranty claim if there is damage.
3. Verify that all power supply and/or charging systems comply to the specified voltage limits for the light.

#### PRODUCT WARRANTY:

**If you have issues with a J.W. Speaker product, please contact the authorized retailer where you purchased it.**

To properly install this light you should have a good understanding of automotive electrical procedures and systems, and proficiency in the installation of headlights. **IF YOU DO NOT, PLEASE SEEK PROFESSIONAL ASSISTANCE.**

### Installation Instructions

1. Turn off the vehicle and disconnect the battery.
2. Remove the existing headlights from the vehicle. Be careful not to damage the vehicle and keep all hardware that attaches the headlight to the vehicle.
3. Disconnect the existing headlight.
4. Connect the Model 90 to the vehicle referencing the Wire Functions information.
5. Lay and secure wires to avoid any pulling or abrasion that may damage the wires or light.
6. Install the headlight with the existing hardware into the bumper, with the J.W. Speaker logo oriented at the bottom.
7. **Aim the lights (instructions available on next page).**

## HEADLIGHTS MUST BE AIMED AFTER INSTALLATION.

Headlight must be securely mounted and properly aimed such that the beam pattern “cut off line” complies with all applicable regulations. **If you are not familiar with the legal requirements for aiming your headlights, please see a professional service provider.** We recommend that headlights are aimed with a headlight aiming system for proper alignment. Failure to properly aim your headlights is a risk to other drivers and could result in tickets or citations with local authorities. J.W. Speaker is not liable for any damage to the vehicle or light, or any tickets/citations as a result of using these guidelines.

### BEFORE INSTALLATION:

1. Vehicle is being aimed on a level surface.
2. All tires are properly inflated.
3. Vehicle is at normal driving height (applicable to listed vehicles).

**NOTE: If a lift kit is added or removed from the vehicle, headlights MUST be AIMED AGAIN.**

### REQUIRED SUPPLIES:

- Tape or chalk to mark lines
- Corresponding tools for your vehicle’s aiming mechanism

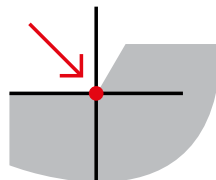
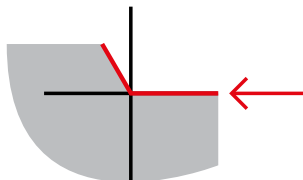
### OPTIONAL SUPPLIES:

- Laser level to expedite the aiming process and will help to increase accuracy in aiming

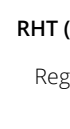
### KEY TERMS:

**Kink (elbow):** The top of the pattern that is the cutoff when aimed at a wall.

**Alignment Point:** The center of the angle in the **Kink** that must align to the center point when aiming the light at a wall.



**LHT (Left Hand Traffic):**  
ECE Regulation countries  
like the United Kingdom

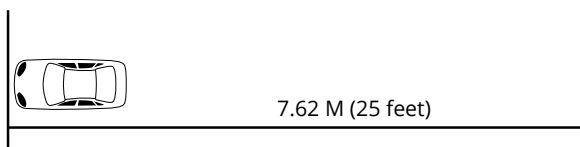


**RHT (Right Hand Traffic):**  
DOT (and some ECE)  
Regulation countries like  
the United States

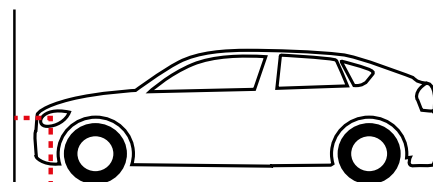
*The following instructions are illustrated for RHT vehicles. Aiming for LHT vehicles will be mirrored to what is shown.*

### AIMING GUIDELINES:

**1.** Park your vehicle close to a wall, in an area where there is at least 7.62 meters (25 feet) of space behind it (excluding the car length).



**2.** On the wall, draw a line from the ground to the approximate center point of the headlight. Repeat for the other headlight. This will create your Y axis lines.



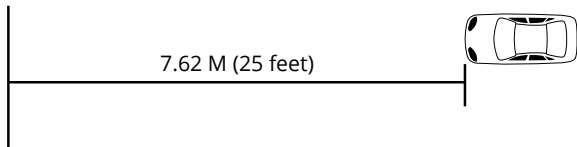
3. Connect the center points between headlights in a straight line, using chalk or tape. This will create your X axis (horizontal) line.  
**NOTE: Use a straight edge and a level to make sure this line is straight.**



4. Extend your vertical, Y (vertical) axis lines up approximately 3 feet. Your lines should match the diagram below, when looking at the lines straight on.

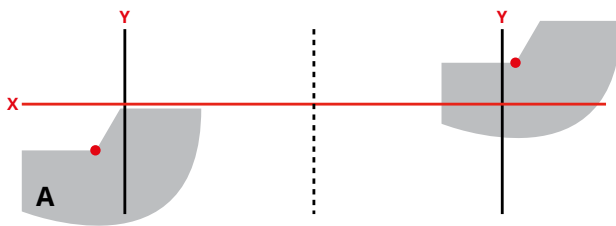


5. Reverse your vehicle in a straight line so that the front of the headlights are 7.62 meters (25 feet) back from the wall.

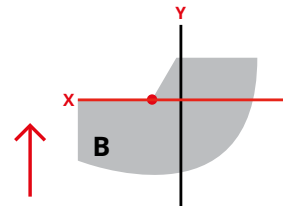


The goal of this sheet is to aim BOTH of your headlights so that the **Alignment Point** is at the crosssection of the horizontal X and vertical Y lines you have drawn. The following directions illustrate the process and proper aiming of headlights.

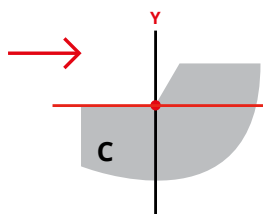
6. When you first turn on your vehicle after installing your headlights, the **Alignment Points** of the **LOW BEAM** may be positioned differently than shown and will likely be aimed differently from each other.



7. Using the alignment mechanisms in your vehicle, adjust one headlight vertically until the **Alignment Point** is even with the X axis.



8. On the same headlight, adjust horizontally until the **Alignment Point** is even with the Y axis.



9. Repeat this process on the other headlight. Both headlights should match the diagram below, where the **Alignment Point** is even with the point where the X and Y axis crosses.

