

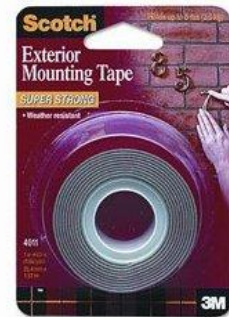


FD3S RX-7 HID Projector Headlight Installation Instructions

Disclaimer: This product is intended for Off Road use only. By installing these lights you assume all risks and liabilities associated with using this product.
(Though our lights do conform to DOT standards, modified lights may not necessarily be DOT legal)

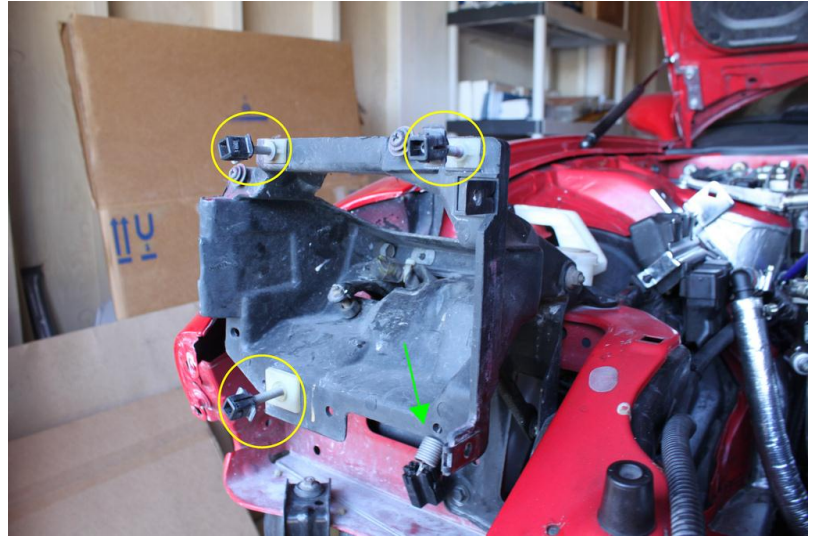
You will need: (not included in kit)

- 3M Heavy duty double sided foam mounting tape (for mounting ballasts)
- Dremel (or drill) with a dremel brand "all purpose cutting bit" or Hacksaw with fine tooth blade (dremel recommended)
- Large zip ties (for mounting ballasts)
- Small zip ties (for securing wiring)
- Electrical tape
- Dielectric grease (optional)
- 10mm socket wrench
- Sharpie
- Philips #2 screwdriver
- Pliers



STEP 1: (removal)

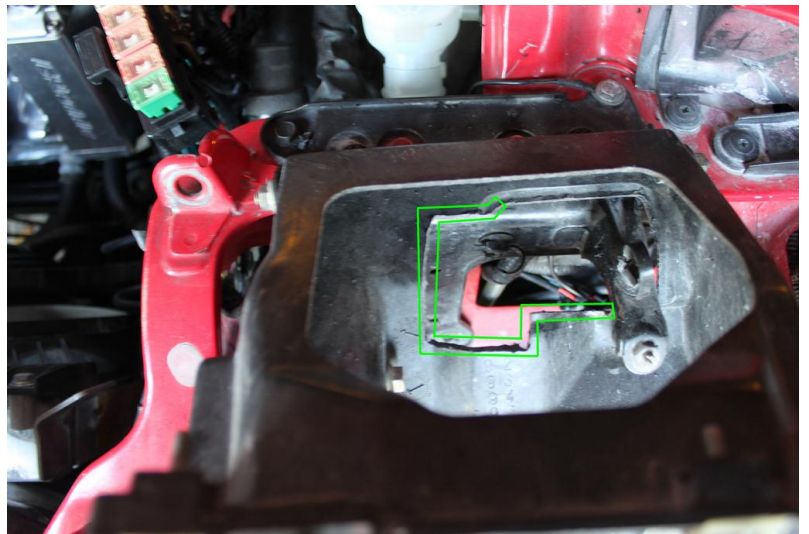
- Press the "headlight-up" button next to your gauge cluster.
- Remove the screws for the black plastic headlight bezel and carefully remove the bezel.
- Loosen or remove the screws holding the painted headlight cover (two in front of the cover, two in back). You may want to manually rotate the headlight adjustment knob under the hood to better access the rear screws. CAREFULLY remove the painted headlight cover and put it someplace safe. You now have access to the back of the light.
- Unclip the H4 harness wire from the bulbs in back of the stock headlight.
- Unhook the spring from the lower corner of the headlamps. (See pic below #1)
- Use pliers to CAREFULLY squeeze the black mounting tabs holding the headlight in, and push the black mount backwards while pulling the headlight forwards. (See picture)
- Remove the entire stock lamp unit and set aside.



1. - Mounting Tabs

STEP 2: (fitting)

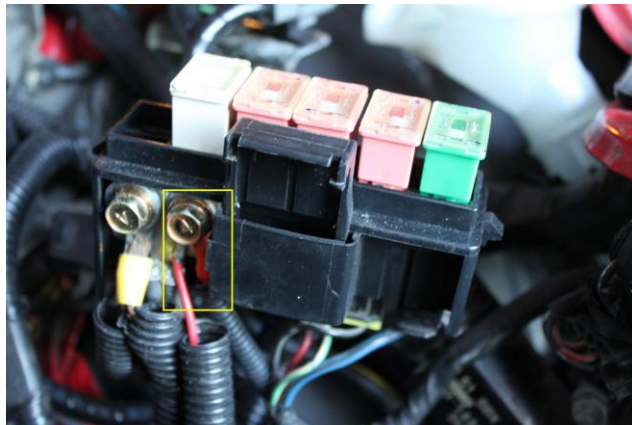
- Thoroughly wipe down the glass on each bulb using included alcohol wipe.
- Insert the bulb into the headlight housing.
- Attach the bulb connector for the ballast to the back of the headlight.
- Test fit the entire headlight assembly and use the sharpie to mark any areas of the inner headlight bucket that will need to be removed to clear the bulb connector and wire.
- Remove the interfering sections of the headlight bucket with the dremel or fine-tooth hacksaw



2. - Trim to clear bulb connector

STEP 3: (wiring)

- Disconnect your battery.
- Find the red positive lead on the included wiring harness and run the positive lead to the main fuse box next to the battery (see pic #3 below.) Open the lower access panel on the main fuse box, unscrew one of the bolts for the main power lead at the bottom of the fuse box, add some dielectric grease to the positive ring terminal and replace the bolt to sandwich the ring terminal. (The harness has its own in-line fuse for the positive terminal). Use small zip ties to neatly route the harness wires, and make sure the fuse is in an accessible location.
- Run the wires for the left and right lamps, and secure with zip ties.
- Locate the two black ground wires (one for each lamp) and find an appropriate grounding point (see picture #4 and 5 below for reference.) There are a number of existing bolts which can be used as mounting points for the ground wires. Clean the contact surface and apply dielectric grease to insure a good ground connection.
- Plug the H4 connector on the harness into the stock drivers side H4 lamp socket. (The HID adapter harness does not use the stock plug for power, just as a signal for the internal relays to control the lights.)



3. Power wire



4. Example of a grounding point. You can use any suitable grounding point.

STEP 4: (finishing up)

- Use zip ties, bolts, or heavy duty double sided foam tape (recommended) to secure the ballasts (see pic #6.)
- Wrap any wires which will rub as the headlights move up and down with electrical tape to prevent damage to the wires.
- Install your lights in the headlight bucket. Re-attach the spring that holds the headlights in place (see pic #7) ***Note: the spring bracket on the lights are not as strong as the OEM bracket; it's recommended that you use the stock brackets on your new lights (see pic #8 for reference.)***
- Connect the hi/lo weather-pack connectors and ballast power connector for each light.
- Double check that the connector which attaches to the back of the bulb is seated properly (see pic #9.)

WARNING - The ballasts have an EXTRAORDINARILY HIGH VOLTAGE OUTPUT. It is easily enough to **KILL YOU!** Use EXTREME care when applying power to the ballasts. Make sure the connector to the bulb is seated properly, and that you are not near the connector when current is flowing through it! If you notice any unusual sounds or smells turn the lights off IMMEDIATELY. DO NOT attempt to diagnose problems with the ballasts powered up. No joke, this can kill ya.... use caution.

- Re-connect the battery.
- Turn on your lights and verify that they power up. (The lights will initially start out a blue/purple color then gradually get whiter as they warm up. Additionally at start-up you may hear a high pitched whine which becomes quieter as the bulbs warm up. This is normal.)
- Turn on your high beams and verify movement of the internal shields. (HID bi-xenon lamps work by moving a physical shield with a solenoid to reveal the full intensity of the bulbs for high beam use. Expect a clicking sound as the solenoid retracts the internal shield.)

Note 1: The headlight housings have been sealed with a special heat resistant glue meant specifically for this purpose. This glue creates a mechanical bond between the housing and clear lens of the headlight, which is sufficient to resist dust and light moisture. For applications where the lights will be exposed to significant amounts of moisture (extended driving in heavy rain etc.) it is recommended that you bridge the void between the clear lens and the headlight housing with a 100% silicone based sealant. (It is not necessary to fill the entire channel with silicon, just bridge the gap.) This will ensure a completely water tight seal. Again, this procedure is not required as the mechanical seal will keep out dirt and light amounts of moisture.

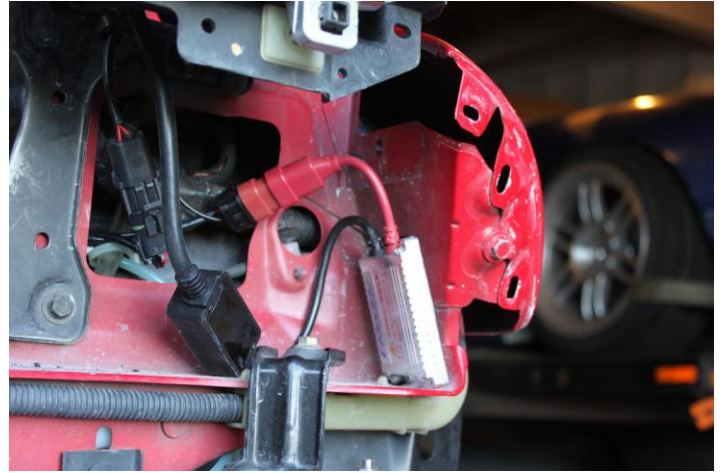
Note 2: A few customers who have been using the lights over the past year have reported "micro cracks" appearing in the plastic lens cover. We have contacted Sonar about the issue, however only the FD lenses exhibit this behavior (none of their other products which use identical materials). The issue appears to arise from the immense heat generated by the oil coolers, which are directly below the pop-up lights when folded into the down position. While only some cars experience this, and it is a cosmetic problem only, we recommend installing a heat shield above the oil coolers to prevent heat from reaching the temperature-sensitive Sonar lenses. Even if micro-cracking of the lens coating does occur, the lighting performance of the headlight system will not be negatively affected, and can typically be polished out using plastic polish if desired. Should any micro cracking occur, it will not affect the structural integrity of the lens. The lenses can also be easily replaced with new units at a later date.

- Carefully replace the painted headlight cover. Do not over-tighten the screws which attach it as they are prone to cracking. You may have to raise and lower the headlight multiple times to adjust/re-align each headlight cover with the fender/bumper/and hood.
- Replace the black plastic headlight shrouds.

DO NOT USE YOUR LIGHTS ON PUBLIC ROADS BEFORE AIMING THEM! You MUST now aim your lights according to the following procedure. These lamps are EXTREMELY BRIGHT and will completely BLIND other drivers if not aimed precisely as follows.



5. Routing of the bulb connector on our prototype kit (we re-used the factory cable holder)



6. One possible possible ballast mounting location using double sided 3m mounting tape



7. Pull spring with pliers to attach to stabilizer foot



8. Mounted, awaiting shroud and cover

Aiming Procedures

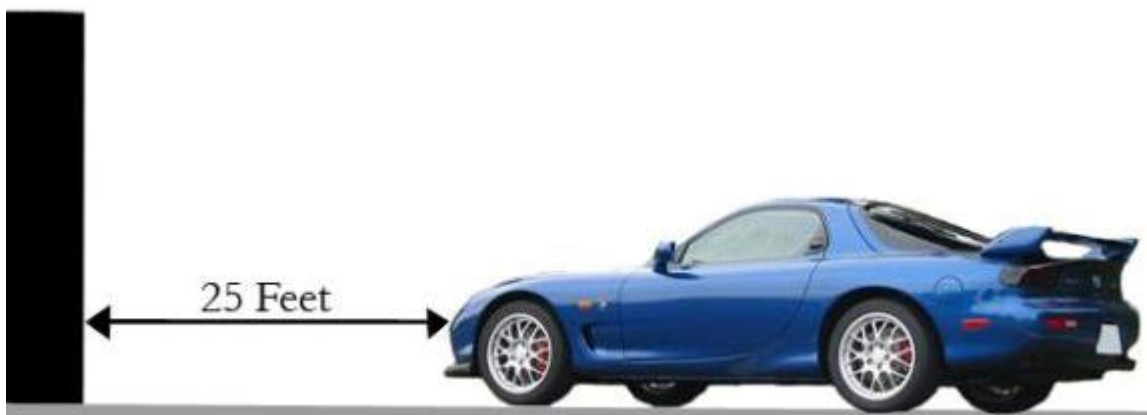
You will need:

- 25ft tape measure
- Blue painters or masking tape
- Philips #2 screwdriver
- 25ft FLAT open space with a wall at the end.

INTRODUCTION: It is of utmost importance that your vehicle's lighting system be aimed properly in order for it to perform its best. Lights that are aimed incorrectly will not only perform poorly but may also blind oncoming traffic. When replacing bulbs, it is a good idea to verify that your lights are properly aimed. Slight variances in filament position can translate to large variances in beam pattern. The following procedure does not require special aiming equipment and ensures proper aim.

STEP 1:

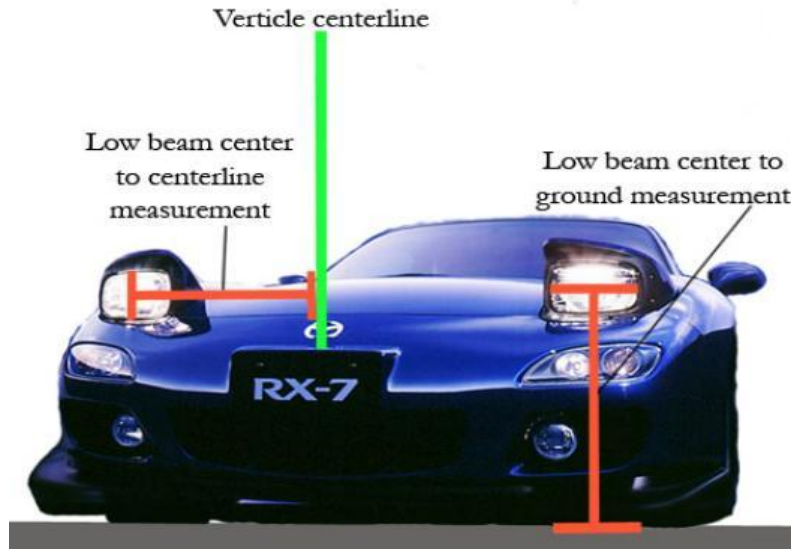
- Find a *flat level* surface adjacent to a *vertical white* wall where the car can be parked. (A garage door is an ideal location at home, or the back parking lot of a retail store at night also is a good location.)
- Pull the car straight up to the wall and park as close as possible.
- Mark a *vertical line on the wall* (using tape) corresponding to the centerline of the vehicle. (This can be done most precisely by using a yardstick and extending it from the hood ornament or badge to the wall.)
- Measure 25ft straight back from the wall and mark that spot on the ground with blue tape.
- Pull the car straight back until the **headlights** are 25 feet from the wall.



STEP 2:

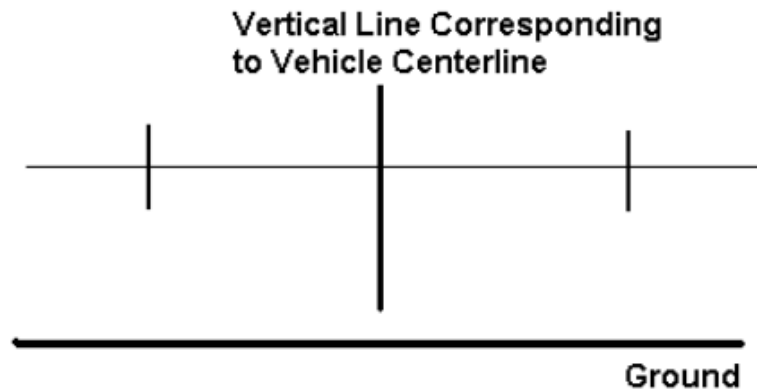
Make the following two measurements, and write them down:

- *Measurement A:* From the ground to the geometric center of one of the headlight lenses
- *Measurement B:* From one of the low beam headlights to the vehicle's centerline



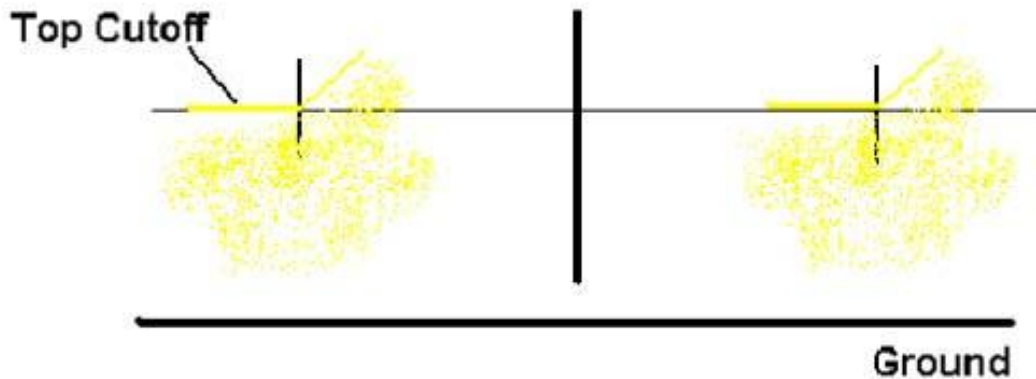
STEP 3:

- Mark one *horizontal line* on the wall at a height *approximately 2 inches* (dependent on the ride height of your vehicle) *lower* than Measurement A (ground to headlight center.)
- On the horizontal line, make vertical marks both to the right and left of the vehicle centerline mark at the distance of Measurement B (center of bumper to headlight center.)



STEP 4:

- Turn the headlights on.
- Use the screwdriver to turn the adjustment screws on each headlamp (up/down, left/right)
- Adjust the vertical aim of the headlights so that the top horizontal cutoff of each of the beams is located along the horizontal line drawn on the wall.
- Adjust the horizontal aim of the low beam headlights so that the point at which the top cutoff of the beam begins to slope upwards is located at the vertical marks made in Step 3.



You are done. Enjoy driving at night! -SakeBomb Garage

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