

# Deep Space Lighting

## VOLVO VNL Bi-XENON HEADLAMP KIT

### Installation Instructions

Estimated Installation Time: 15-45 minutes

Tools Needed:

#2 Philips screwdriver

10mm socket and ratchet

Before starting, make sure your headlamp is a good candidate for retrofitting. Look for moisture, and repair before starting. Hazed lenses should be polished and clear-coated for optimal performance, but that holds true with or without the kit. The lenses can be polished before or after installation. If the truck has been exposed to road salt, soaking the headlamp mounting bolts with a penetrating oil is advised.

### Package contents:

2 Morimoto Mini D2S projectors, with VNL brackets and mounting screws

2 Ballasts with double-sided adhesive pads

2 D2S bulb to ballast connectors

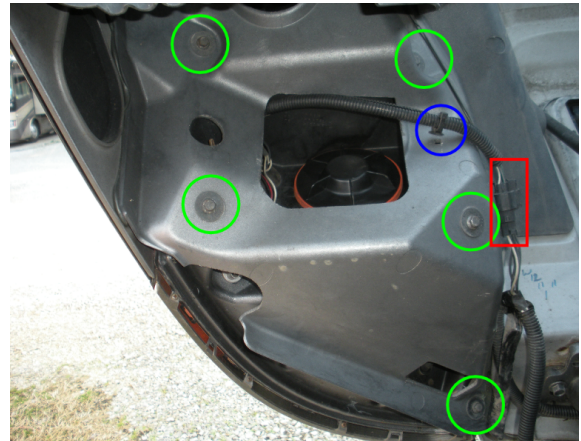
2 Wiring harnesses

2 Velcro mounting pads

2 Morimoto XB35 bulbs

#### 1. Remove headlamp:



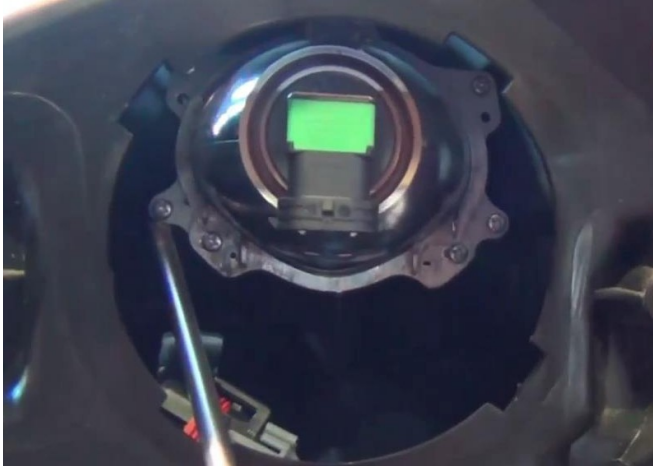

- a) Make sure headlights are turned off, and raise hood. Pull up on gray retaining clip from headlight electrical connector (red rectangle).
- b) Squeeze tab while pulling upward to remove lamp harness from vehicle harness.
- c) Separate retaining clip holding harness (blue circle) to hood.
- d) Remove 5 10mm bolts (green circles) from headlamp while supporting headlamp to prevent it from falling. *NOTE: Some trucks will only have 4 mounting bolts.*



#### 2. Take headlamp to a table for disassembly. Lay soft towel under lamp to protect against scratches.

#### 3. Remove both bulb access covers by turning counter-clockwise.



<p>4. Loosen the E6 (external Torx) aim adjusting screw several turns and lubricate if there are any signs of corrosion on it to make adjustment easier at the end of the installation.</p>	
<p>5. Unplug wiring harness from low beam (upper) bulb. You may find it easier to remove bulb before disconnecting harness.</p>	
<p>6. Remove 4 Phillips screws holding low beam projector in place.</p>	
<p>7. Remove projector through bulb access hole.</p>	
<p>8. Remove xenon bulb and new projector from packaging. Install bulb into bi-xenon projector, using screw retainer to lock in place.</p>	<p><i>Do not touch the glass surface. If you do, or if there is any other dust/dirt on the bulb, it should be cleaned with an alcohol wipe.</i></p>
<p>9. On new projector, locate the group of 3 lens retainer screws on each side. Remove the lowermost of the group of 3 with a Philips screwdriver.</p>	

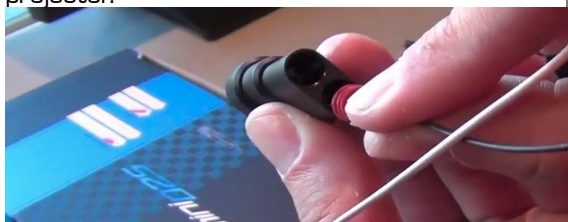
10. Locate projector mounting brackets. For each projector, there is a left and right bracket. The left bracket (facing the driver's side of the vehicle when installed) has a point on the inner edge to assist in identification. Remove mounting screws from brackets.



11. Insert mounting screws from rear of projector an screw into mounting brackets. Start all 4 screws before tightening.



12. Connect high beam solenoid harness (brown and white wires) to projector, and insert loose terminals into black plug shell. The connector is located on the lower right of the back of the projector.



13. Loosely install bi-xenon projector in headlamp, starting but not tightening 2 of the screws removed in step 3 in the upper 2 mounting holes. Then start lower left screw,  
14. Tighten top screws first, then lower left screw, making sure projector is centered in opening. The lower right screw is unused.



15. Connect *Low Beam Input* connector on adapter harness to connector removed from low beam bulb in step 9. Verify that plug is oriented correctly.



16. Connect adapter harness *High Beam Solenoid* connector to the connector attached to the bi-xenon projector (small red and black wires). Make sure connectors are inserted straight to avoid bending pins.




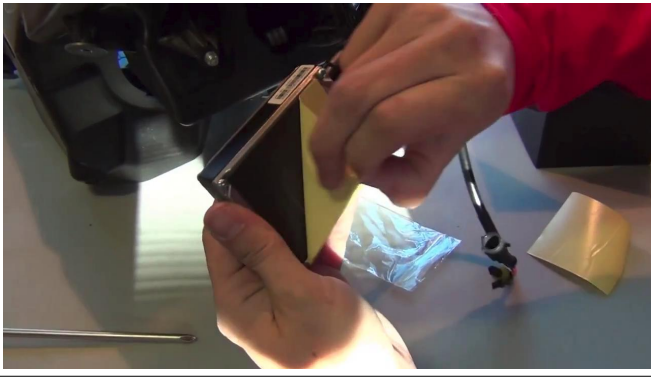
17. Unplug headlamp harness from high beam (lower) bulb, and connect the plug removed from the high beam bulb to the *High Beam Input* connector on the adapter harness.  
*NOTE: You will not re-connect anything to the original high beam bulb. It is not used.*



18. Connect igniter cable to ballast.





<p>19. Connect bulb adapter to xenon bulb by aligning tabs on bulb, and twisting clockwise until locked. Do not use excessive force.</p>	
<p>20. Secure ballast and resistor inside headlamp housing using hook-and-loop pads and reinstall headlamp housing onto hood. Reconnect headlamp harness to vehicle harness, and confirm headlamp operation with engine running.</p>	
<p>21. Reinstall bulb access covers, close hood, and verify proper headlight alignment.</p>	<p>There is a single <i>E6</i> external Torx adjustment screw for setting the headlamp's vertical alignment. When aimed at a wall, the left cutoff in the low beam pattern on the wall at 25 feet should be approximately 3.5" below the center of the projector.</p>

## Troubleshooting Tips

Symptom:	Cause:	Remedy:
Short circuit error on low beam circuit	Low Beam Input connector installed backwards	Unplug and rotate connector and reconnect.
Lights go out when switching to high beams (with open circuit error on high beam circuit)	High beam input connector not installed OR high beam solenoid connector connected to factory high beam bulb	Check high beam input connector; make sure high beam solenoid connector is connected to solenoid (brown and white) wires and that nothing is attached to factory high beam bulb.
Light pattern doesn't change when switching to high beams	Solenoid connector (brown and white wires) not installed	Confirm that wires from solenoid are connected to adapter harness, and that small plug is connected to front of projector housing.
No light on low beams, but lights work on high beams	Ballast and high beam solenoid connectors reversed	Remove both connectors and reconnect to correct components