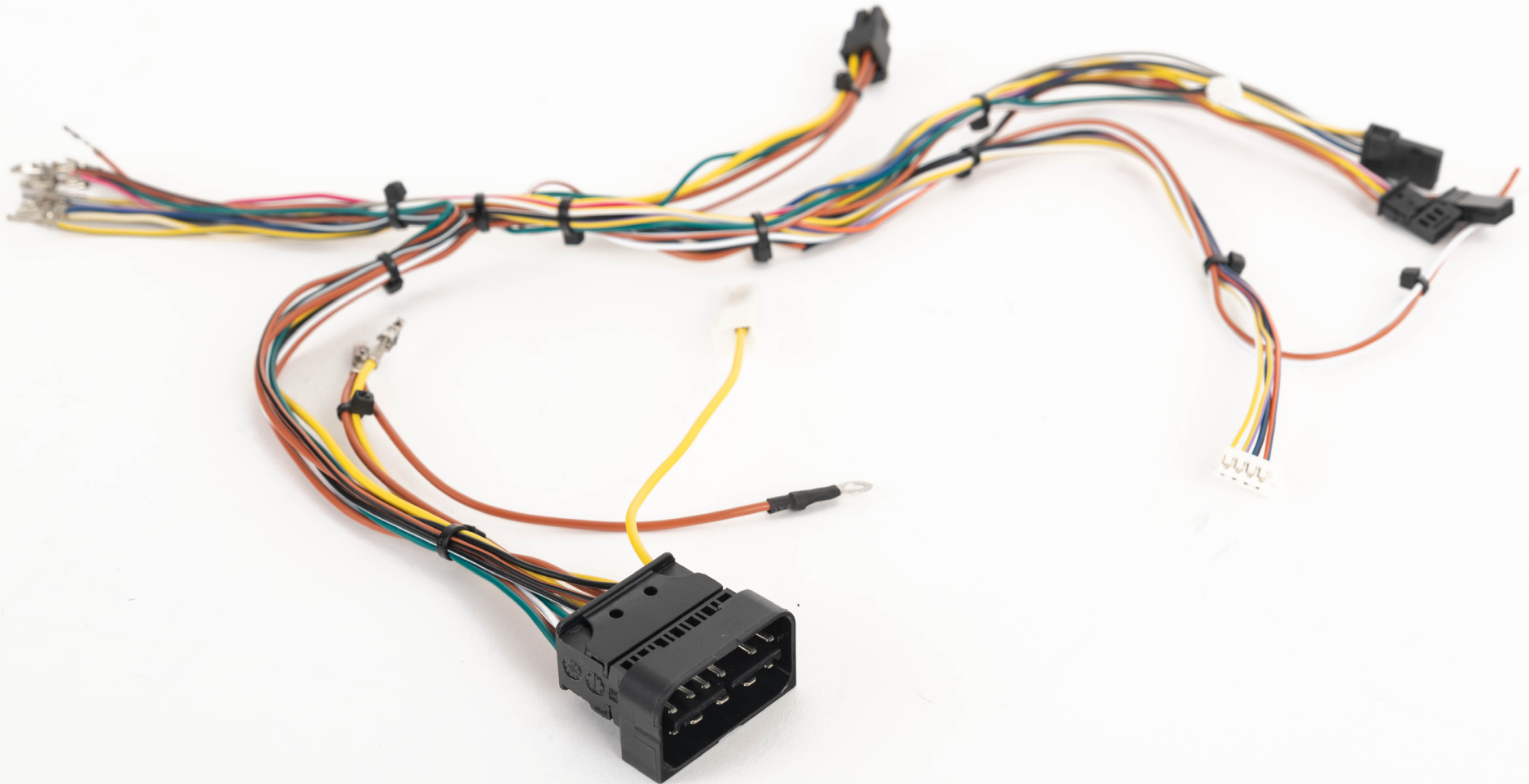




**BMW E9x Pre-Facelight
Internal Headlight Wiring Harness
Installation Instructions - [Click HERE to Shop](#)**



**Skill Level 2
- Moderate -
Some Experience
Recommended**



Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

REQUIRED TOOLS

Note: The tools required for each step will be listed by the step number throughout these instructions.

Standard Automotive Tools

- Protecta-Sockets (for lug nuts)..... [ES#2221243](#)
- 3/8" Drive Ratchet..... [ES#2765902](#)
- 3/8" Drive Torque Wrench..... [ES#2221245](#)
- 3/8" Drive Deep and Shallow Sockets..... [ES#2763772](#)
- 3/8" Drive Extensions [ES#2804822](#)
- Hydraulic Floor Jack [ES#2834951](#)
- **Torx Drivers and Sockets** [ES#11417/8](#)
- 1/2" Drive Deep and Shallow Sockets..... [ES#2839106](#)
- 1/2" Drive Ratchet
- 1/2" Drive Extensions
- 1/2" Drive Torque Wrench..... [ES#2221244](#)
- 1/2" Drive Breaker Bar [ES#2776653](#)
- Bench Mounted Vise
- Crows Foot Wrenches
- **Hook and Pick Tool Set**..... [ES#2778980](#)

Required For This Install

Available On Our Website

- **1/4" Drive Ratchet**..... [ES#2823235](#)
- **1/4" Drive Deep and Shallow Sockets**..... [ES#2823235](#)
- **1/4" Drive Extensions**..... [ES#2823235](#)
- Plier and Cutter Set..... [ES#2804496](#)
- **Flat and Phillips Screwdrivers** [ES#2225921](#)
- **Jack Stands** [ES#2763355](#)
- Ball Pein Hammers
- Pry Bar Set..... [ES#1899378](#)
- Electric/Cordless Drill
- Wire Strippers/Crimpers
- Drill Bits
- Punch and Chisel Set
- Hex Bit (Allen) Wrenches and Sockets [ES#11420](#)
- Thread Repair Tools [ES#1306824](#)
- Open/Boxed End Wrench Set [ES#2765907](#)

Specialty Tools

- **Trim Removal Tool Kit**..... [ES#517779](#)
- **Terminal Tool Kit** [ES#11414](#)
- **Crimping/Stripping Pliers** [ES#2625692](#)
- **Heat Gun**

INSTALLATION NOTES

- **RH** refers to the *passenger side* of the vehicle.
- **LH** refers to the *driver side* of the vehicle.
- Always use the proper torque specifications.
- If applicable to this installation, torque specifications will be listed throughout the document and at the end as well.
- Please read all of these instructions and familiarize yourself with the complete process **BEFORE** you begin.

GENERAL PREPARATION AND SAFETY INFORMATION

ECS Tuning cares about your health and safety, please read the following safety information. This information pertains to automotive service in general, and while it may not pertain to every job you do, please remember and share these important safety tips.

- Park your car in a safe, well lit, level area.
- Shut the engine off and remove the key from the ignition switch.
- Make sure any remote start devices are properly disabled.
- **ALWAYS** wear safety glasses.
- Make sure the parking brake is applied until the vehicle is safely lifted and supported.
- Whether lifting a vehicle using an automotive lift or a hydraulic jack, be sure and utilize the factory specified lift points.
- Lifting a vehicle in an incorrect location can cause damage to the suspension/running gear.
- **ALWAYS** support the vehicle with jack stands.
- **ALWAYS** read and follow all safety information and warnings for the equipment you are using.

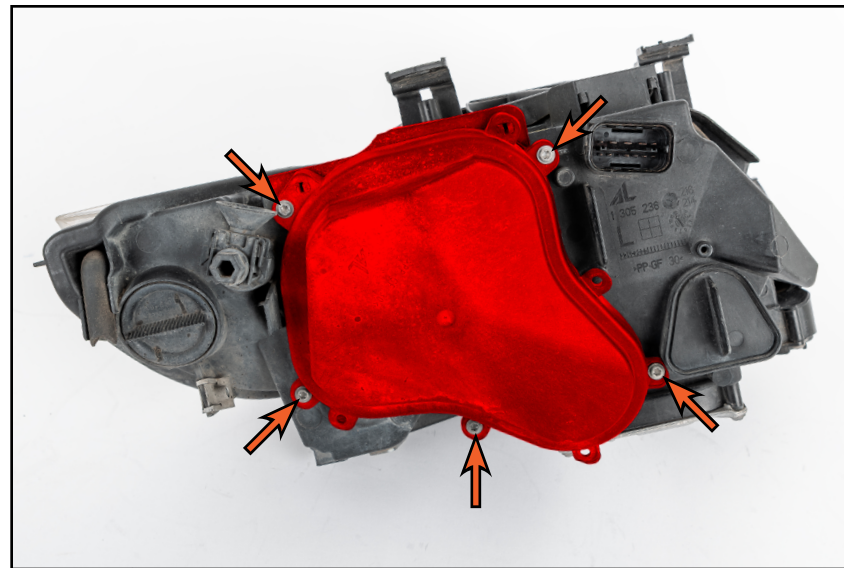


NEVER get underneath a vehicle that is supported only by a jack, and **ALWAYS** make sure that the vehicle is securely supported on jack stands.

WIRING HARNESS INSTALLATION

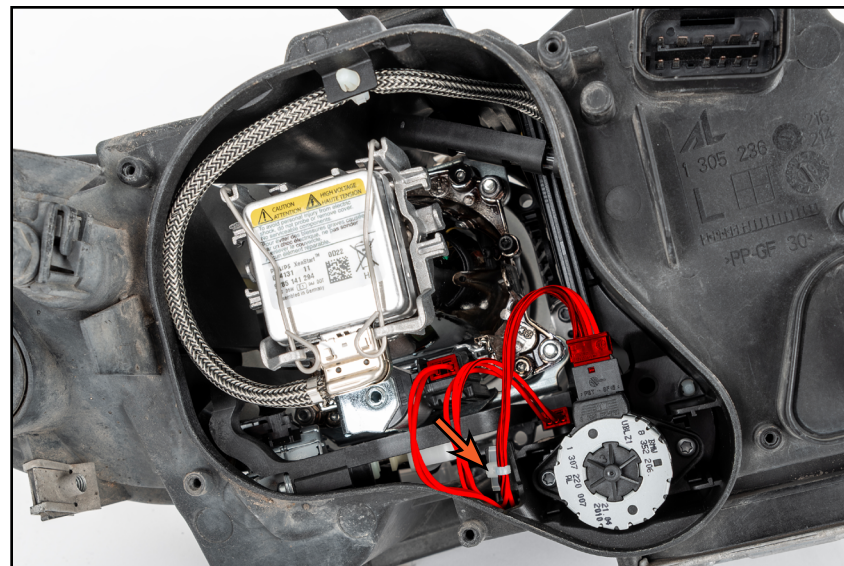
Step 1: T20 Torx Socket & Ratchet

Loosen the screws (arrows) and pull the access panel (highlighted in **RED**) free from the back of the headlight.



Step 2: Angled Pick

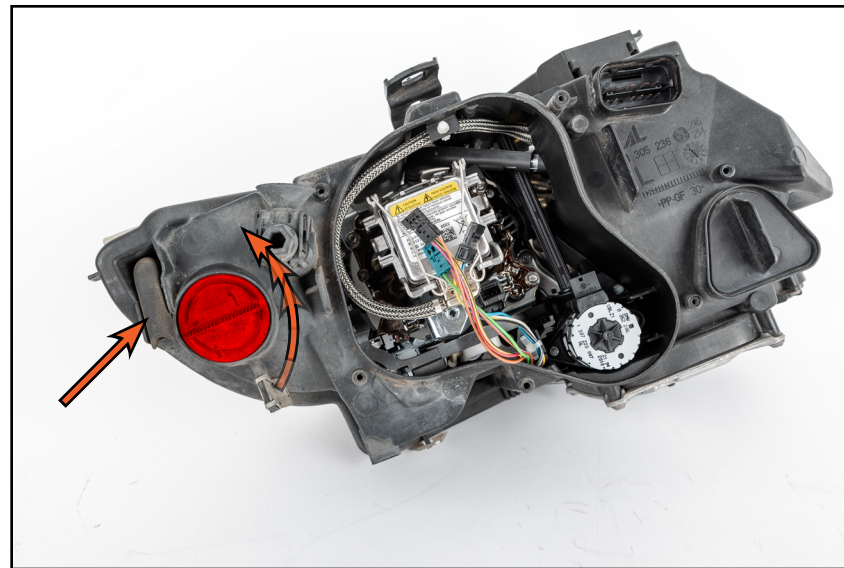
Disconnect the three connectors (highlighted in **RED**) and free up the plastic clip (arrow).



WIRING HARNESS INSTALLATION

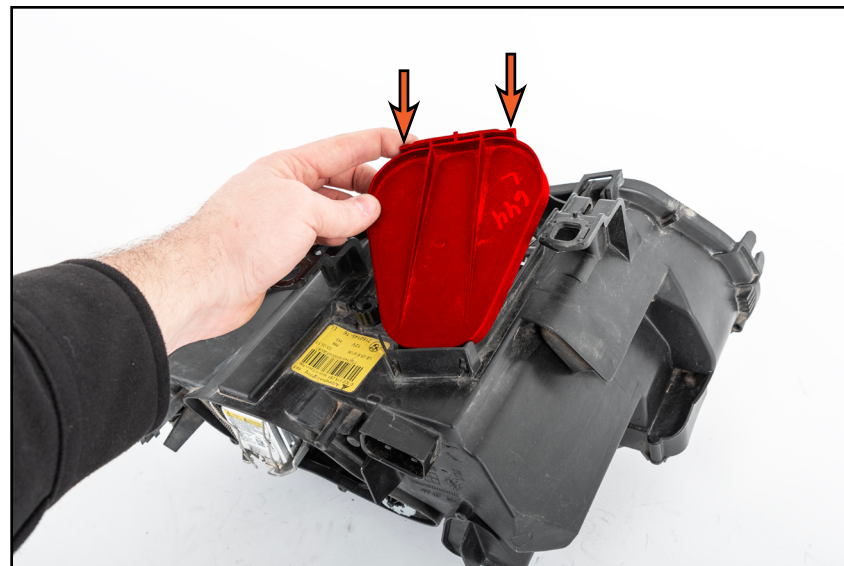
Step 3:

Remove the vent tube (arrow) then rotate the turn signal bulb holder (highlighted in **RED**) counterclockwise and pull it free.



Step 4: Trim Removal Tool

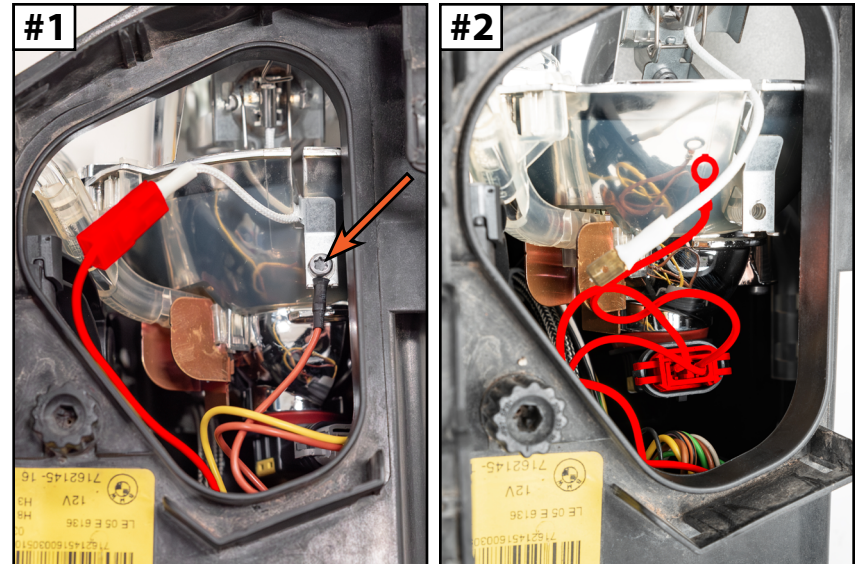
Pry the two retaining tabs (arrows) inward and pull up to remove the access cover (highlighted in **RED**) from the top of the headlight.



WIRING HARNESS INSTALLATION

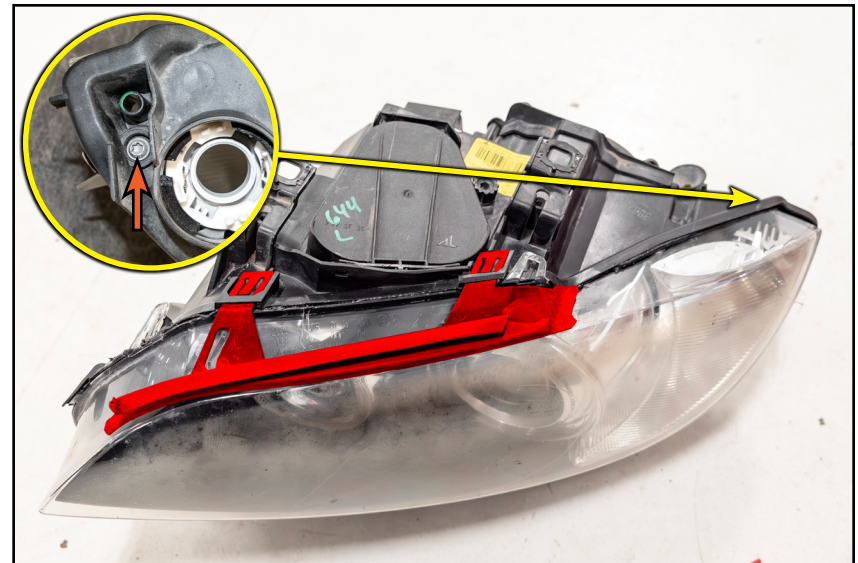
Step 5: T20 Torx Socket & Ratchet

Remove the screw (arrow) that secures the ring terminal to the projector, then disconnect the spade connector (highlighted in **RED** in **Photo #1**). Disconnect the connector (highlighted in **RED** in **Photo #2**) from the high beam bulb.



Step 6: T25 Torx Socket & Ratchet, Heat Gun

Depress the retaining tabs and remove the upper headlight gasket (highlighted in **RED**). Remove the screw (arrow in inset photo) that secures the outer corner of the lens to the headlight, then apply heat around the perimeter of the lens to soften the rubber sealant.



WIRING HARNESS INSTALLATION

Step 7: Heat Gun, Trim Removal Tool

Lift up on the retaining tabs around the perimeter of the lens and carefully pry the lens free from the headlight, applying heat as you go.



Step 8:

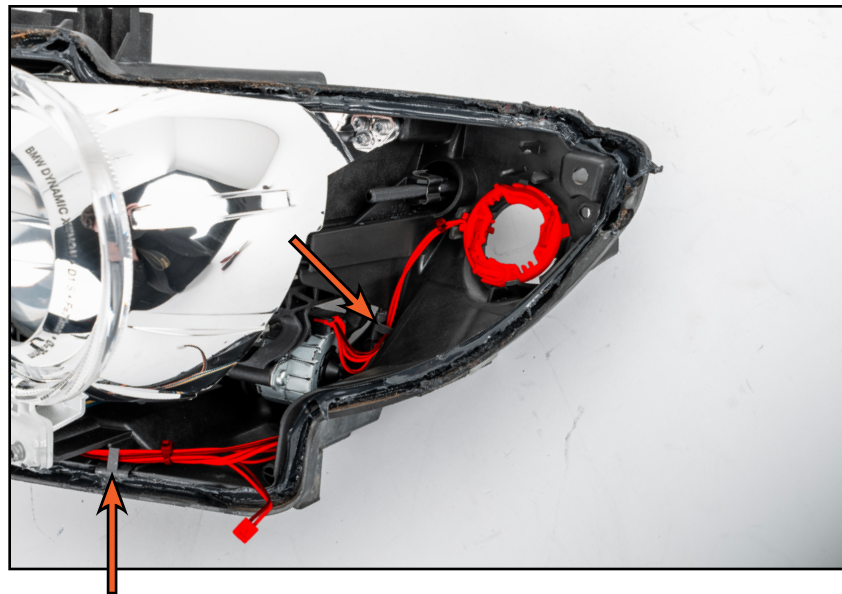
Disconnect the small connector (highlighted in **RED**) to free the lens from the headlight.



WIRING HARNESS INSTALLATION

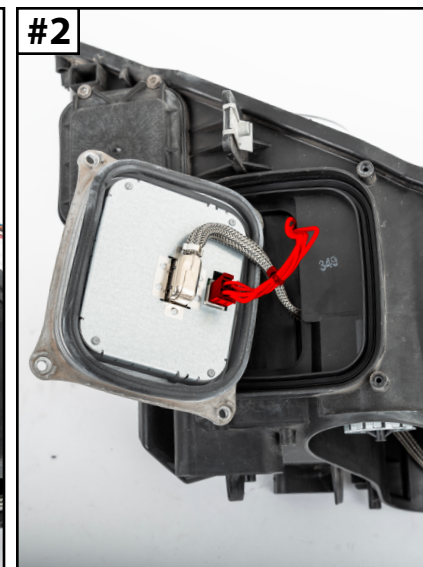
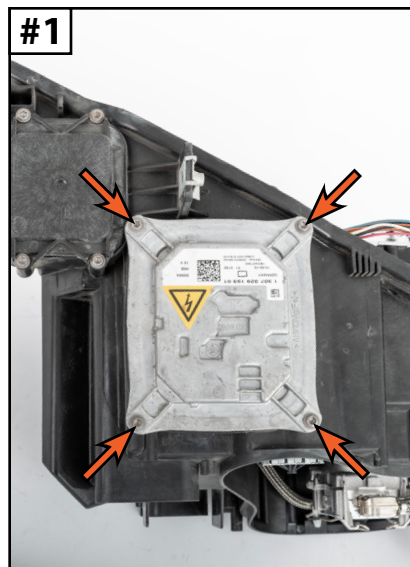
Step 9:

Remove the two clips (arrows), then free up the wiring harness (highlighted in **RED**) by disconnecting the connector for the headlight motor and removing the turn signal bulb connector.



Step 10: T20 Torx Socket & Ratchet

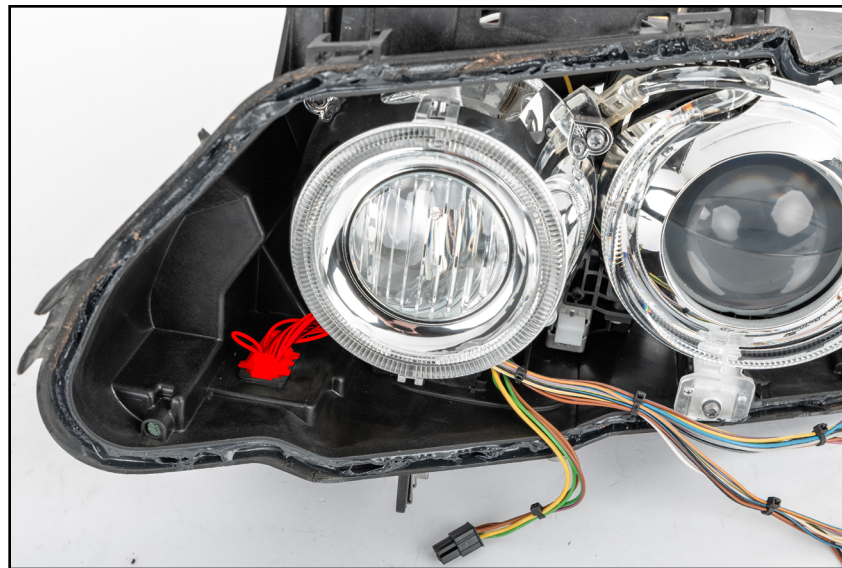
Remove the four screws (arrows in **Photo #1**), pull the ballast free from the bottom of the headlight, and disconnect the connector (highlighted in **RED** in **Photo #2**).



WIRING HARNESS INSTALLATION

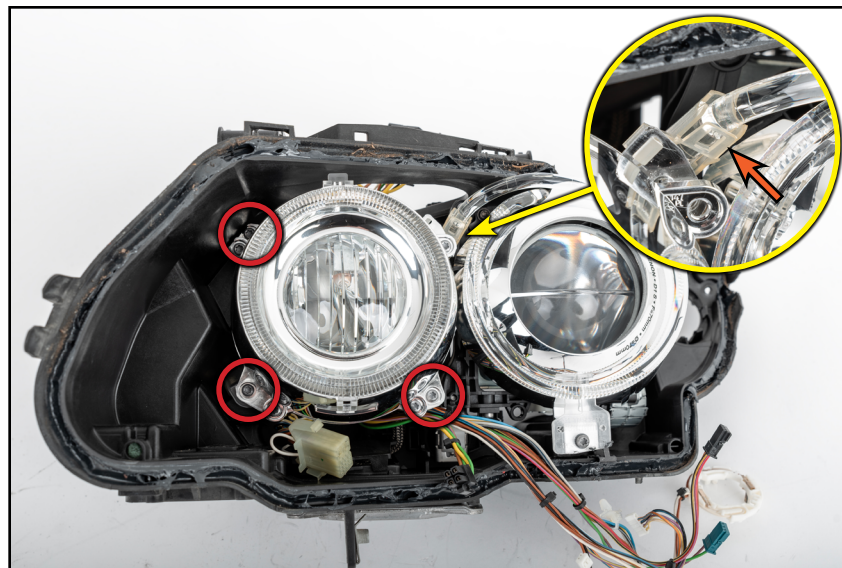
Step 11:

Disconnect the connector (highlighted in **RED**) for the headlight control module.



Step 12: T25 Torx Socket & Ratchet

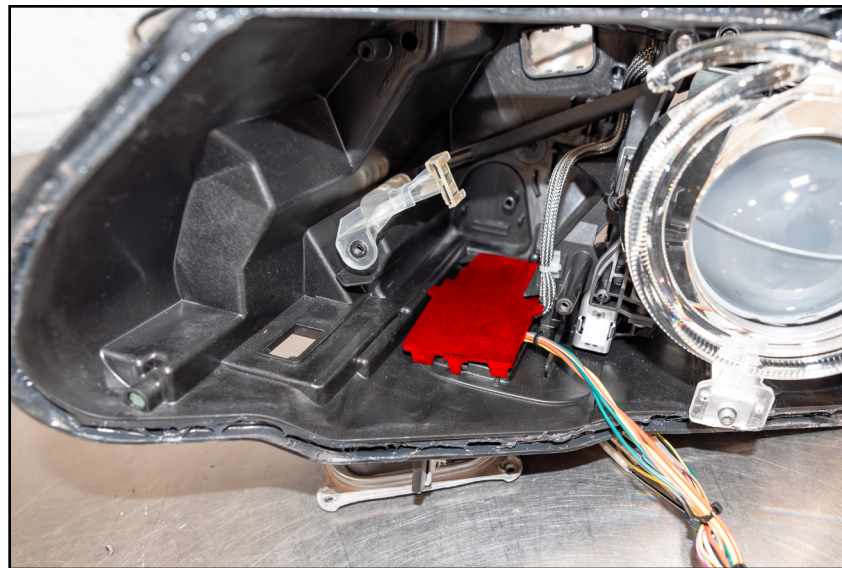
Remove the three screws (circled in **RED**), disconnect the high beam DRL light tube (arrow in inset photo) and remove the high beam projector.



WIRING HARNESS INSTALLATION

Step 13:

Remove the ballast cover panel (highlighted in **RED**) and free up the headlight wiring harness.



Step 14:

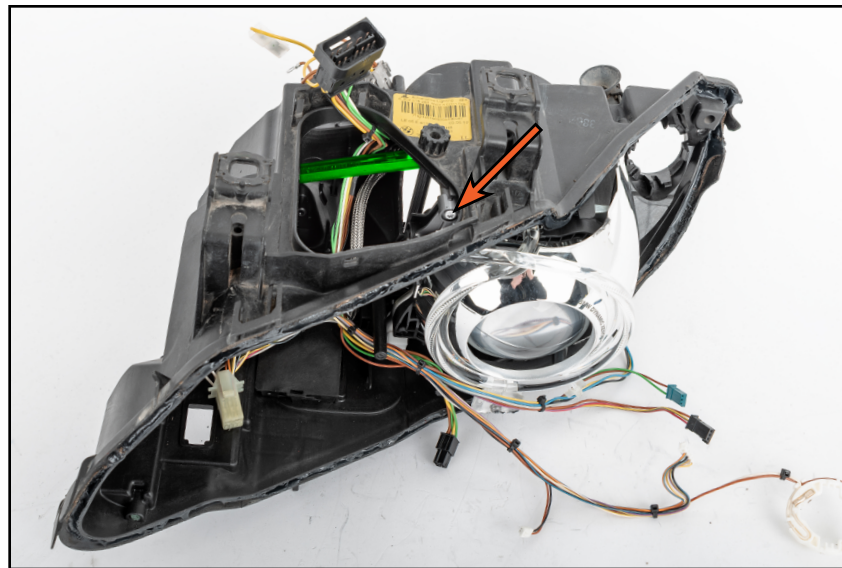
Release the retaining tabs and push the headlight wiring harness main connector (highlighted in **RED**) out of the slot and into the inside of the headlight.



WIRING HARNESS INSTALLATION

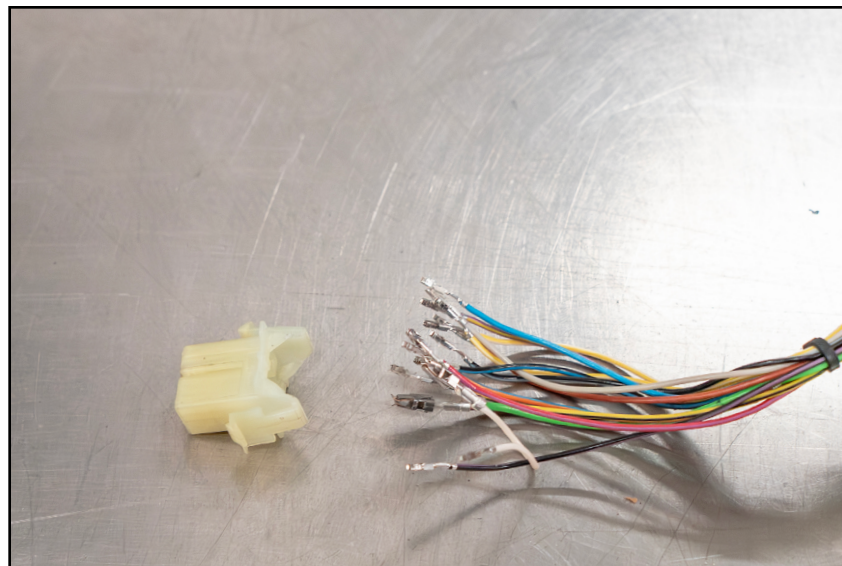
Step 15: T20 Torx Socket & Ratchet

Remove the screw (arrow) to loosen the DRL light tube bridge (highlighted in **GREEN**), then carefully guide the headlight wiring harness out from the top.



Step 16: Terminal Tool

De-pin the headlight control module connector as shown and set it aside.



WIRING HARNESS INSTALLATION

Step 17: Measuring Tape, Wire Cutters

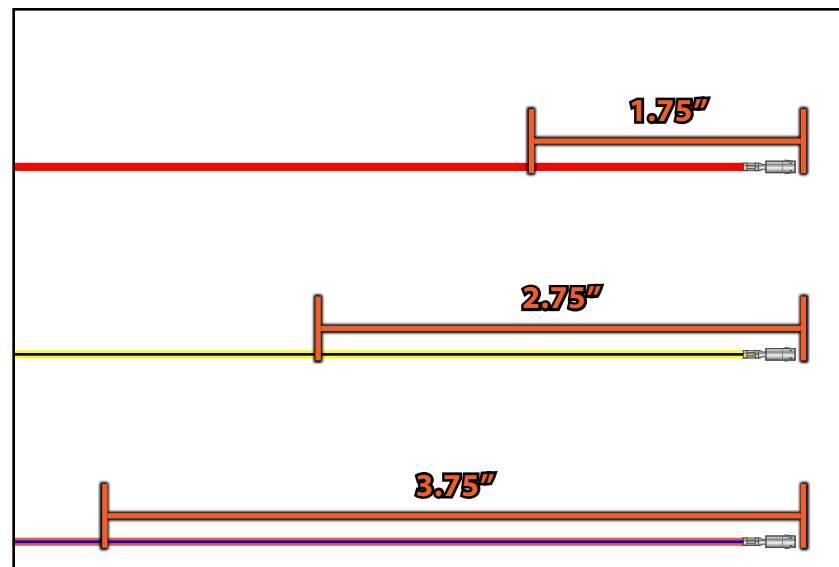
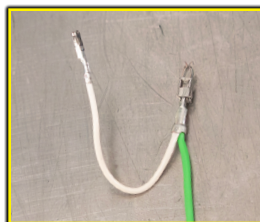
Separate the OE wires into sets of three. In each set:

- Cut the first wire 1.75" back from the end of the pin.
- Cut the second wire 2.75" back from the end of the pin.
- Cut the third wire 3.75" back from the end of the pin.

Repeat until all OE pin wires are cut to length and arranged in sets of three (as shown in **Photo #2**).



The LH headlight harness includes one wire with an attached white jumper wire (see photo on the right). Do not cut the white jumper wire. Measure and cut only the main wire, leaving the jumper wire intact.

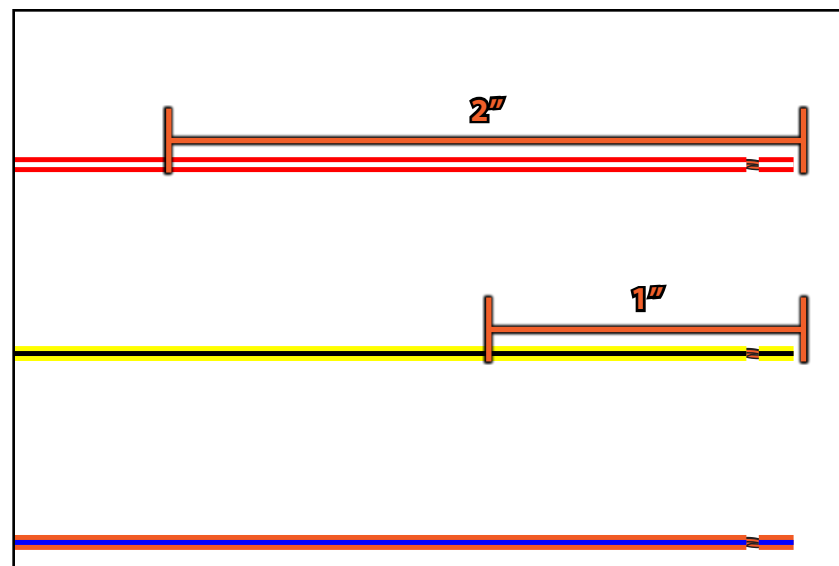


Step 18: Measuring Tape, Wire Cutters

For each set of three OE pin wires, find the matching color wires on the new harness and group these three new wires together. In each set:

- Cut the wire matching the longest OE pin wire back 2".
- Cut the wire matching the medium-length OE pin wire back 1".
- Leave the wire matching the shortest OE pin wire at full length.

Repeat until all matching wires on the new harness are cut to length.

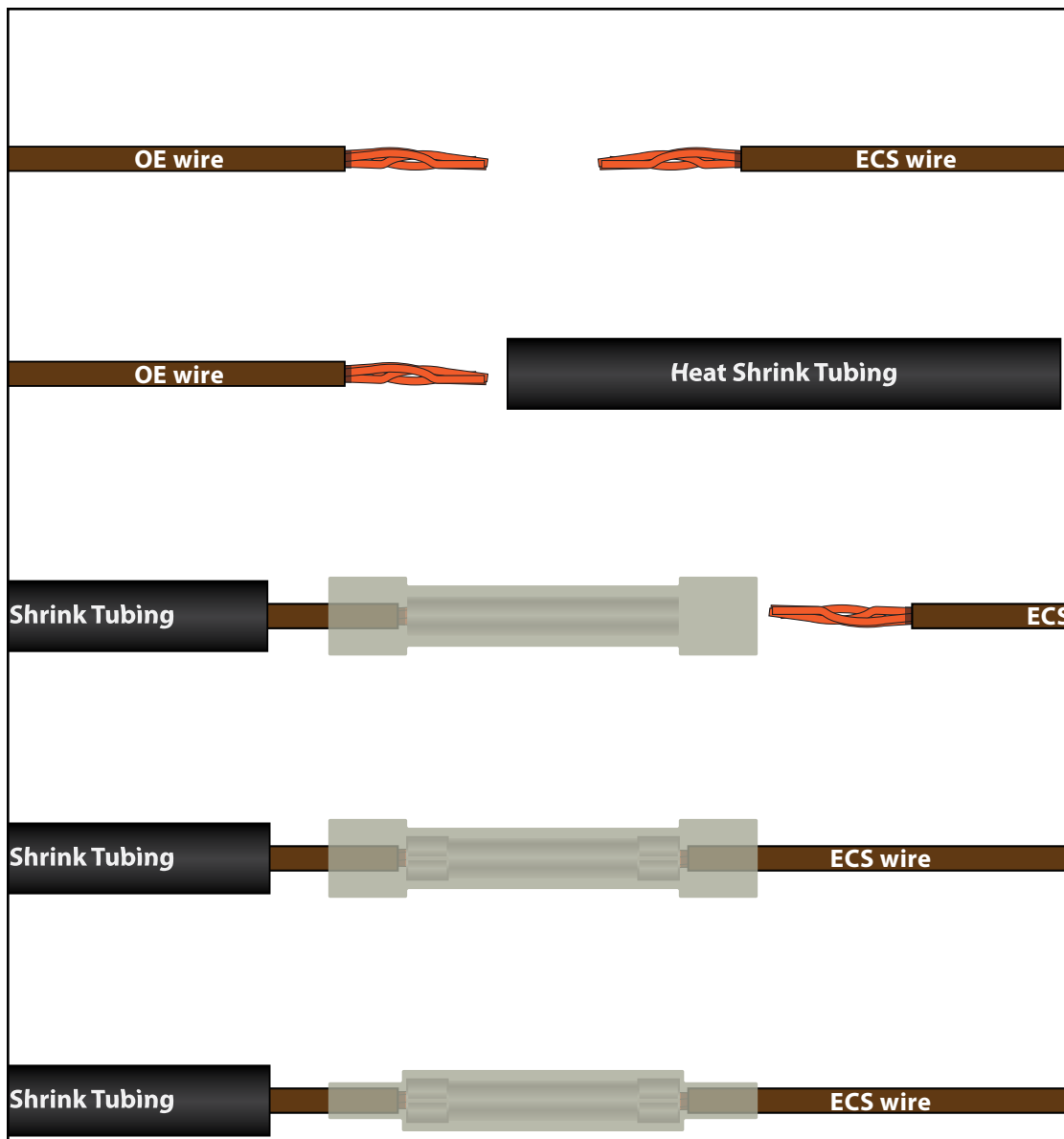


WIRING HARNESS INSTALLATION

Step 19:

Please take a moment to familiarize yourself with the correct procedure for crimping a butt connector. Terminal crimping pliers are used to crimp the metal inner barrel in the connector, creating a firm and solid electrical connection, before using a heat gun to shrink the outer sheathing to create a water-tight seal.

1. Locate the matching color OE pin wire and ECS harness wire and strip each wire back approximately 1/4".
2. Slide the heat shrink tubing onto the cut OE pin wire (**DO NOT** forget to do this **BEFORE** you connect the wires).
3. Align the corresponding color wires in the butt connector so that the exposed wires are fully inserted into the metal inner barrel.
4. Insert the connector into the appropriately sized crimping die, then crimp both ends of the metal inner barrel (arrows) ensuring the connector is fully clamped down onto the wire. Gently tug on the wire to make sure the crimp is secure, if the wire pops out it may be possible to reinsert the wires and crimp the connection again. Extra butt connectors will be included in your kit.
5. Using a heat gun, evenly heat the connector until the external sheathing fully shrinks and seals around the wires.



WIRING HARNESS INSTALLATION

Step 20: Wire Stripping/Crimping Pliers

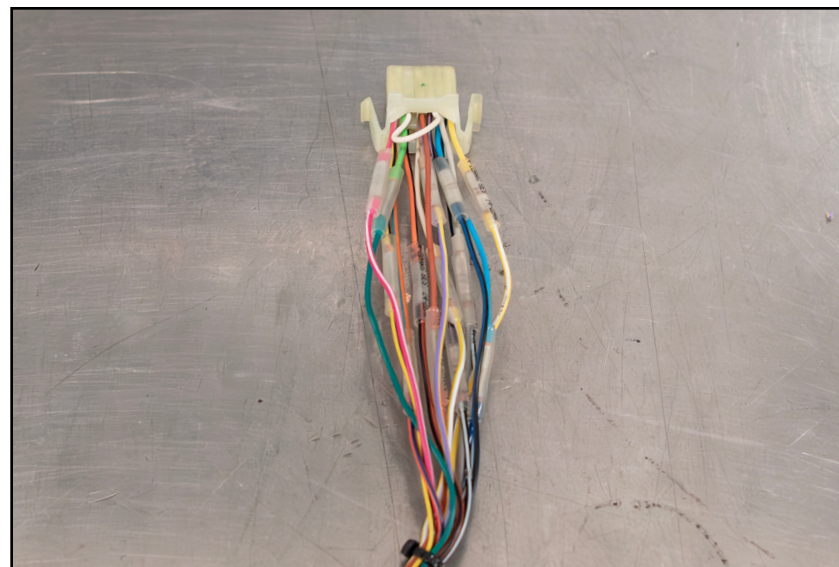
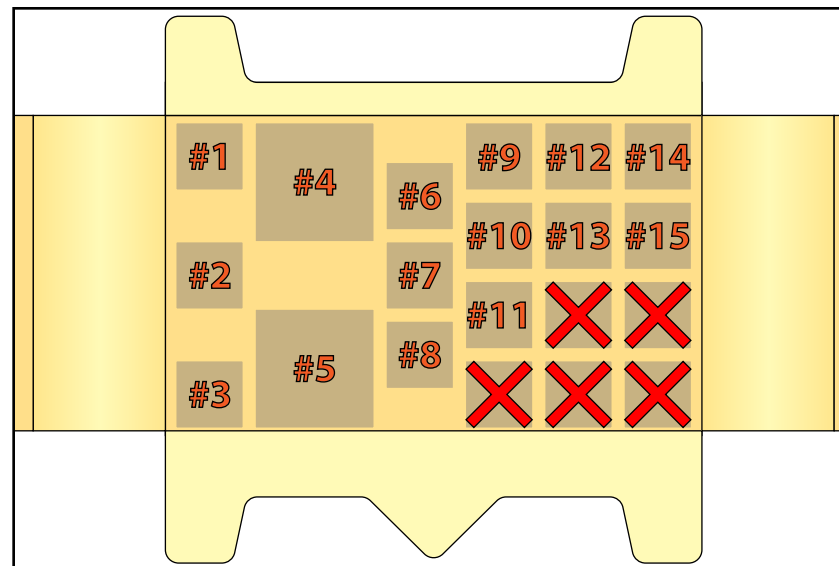
Slide the heat shrink tubing over the OE pin wires and evenly heat the tubing until it fully shrinks and seals around the wires. Using the process we reviewed on the last two pages, cut each OE pin wire and connect it to the corresponding color wire on the new wiring harness. Be sure to give each wire a small “tug” to check that the connector is firmly crimped into place. Using the chart below, reinsert all the wires into the slots in the OE headlight control module connector as shown in the photo, ensuring that each of the locking tabs on the terminals snap into the matching slot in the connector.

Pin #1: Red w/ purple tracer
Pin #2: Yellow w/ black tracer
Pin #3: Orange w/ blue trace
Pin #4: Green (w/ white wire)
Pin #5: Orange w/ black tracer
Pin #6: Brown
Pin #7: Purple w/ yellow tracer
Pin #8: White w/ yellow tracer

Pin #9: White jumper wire
Pin #10: Black w/ purple tracer
Pin #11: Black w/ blue tracer
Pin #12: Gray
Pin #13: Blue
Pin #14: Yellow w/ white tracer
Pin #15: Black w/ gray tracer



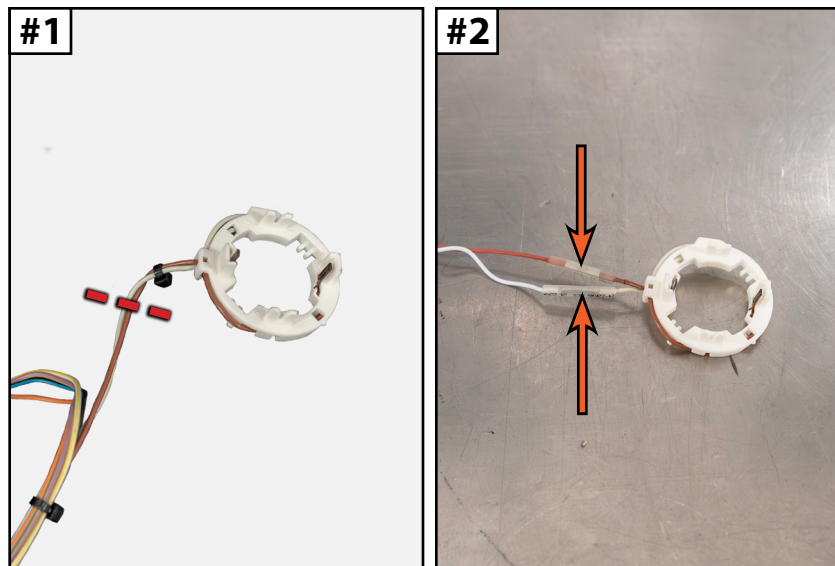
The heat shrink tubing is not shown in these photos for illustrative purposes.



WIRING HARNESS INSTALLATION

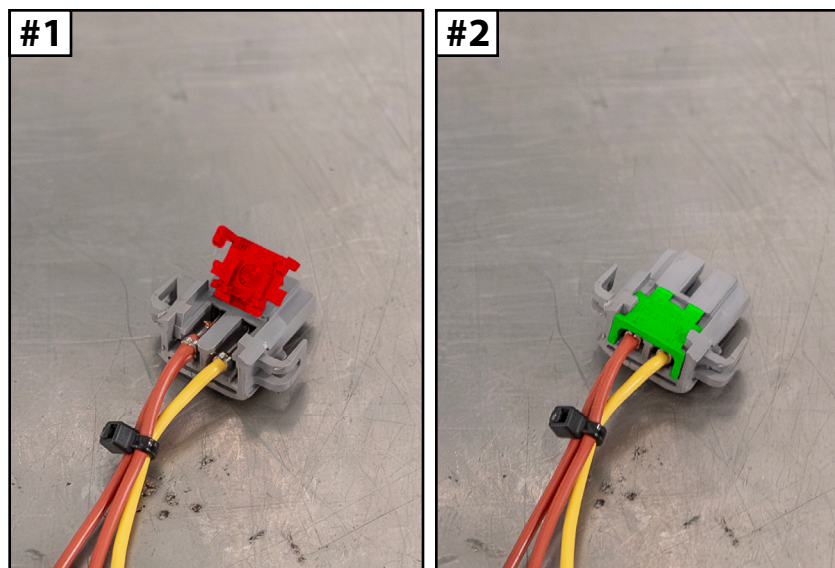
Step 21: Wire cutters, Wire Stripping/Crimping Pliers

Measure 2" back from the turn signal bulb connector on the OE harness and cut the wires (**RED** lines in **Photo #1**) to remove it. Transfer the turn signal bulb connector to the corresponding color wires on the new ECS harness using the process we reviewed on [Page 13](#).



Step 22: Angled Pick, Terminal Tool

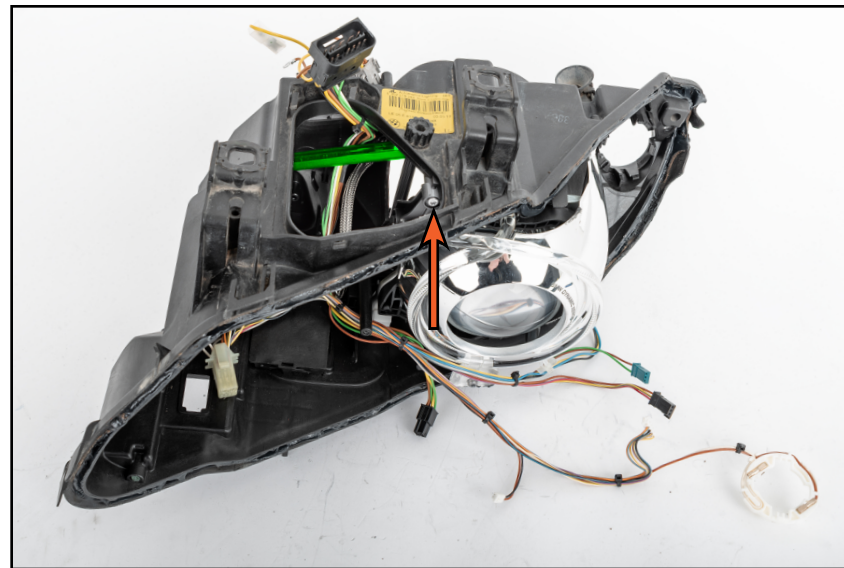
Open the latch (highlighted in **RED** in **Photo #1**) on the high beam bulb connector on the OE harness, de-pin it and set it aside. Locate the corresponding color pin wires on the new ECS harness and insert them into the slots in the connector, ensuring that each of the locking tabs in the terminals snap into the matching slot in the connector, then close the latch (highlighted in **GREEN** in **Photo #2**).



WIRING HARNESS INSTALLATION

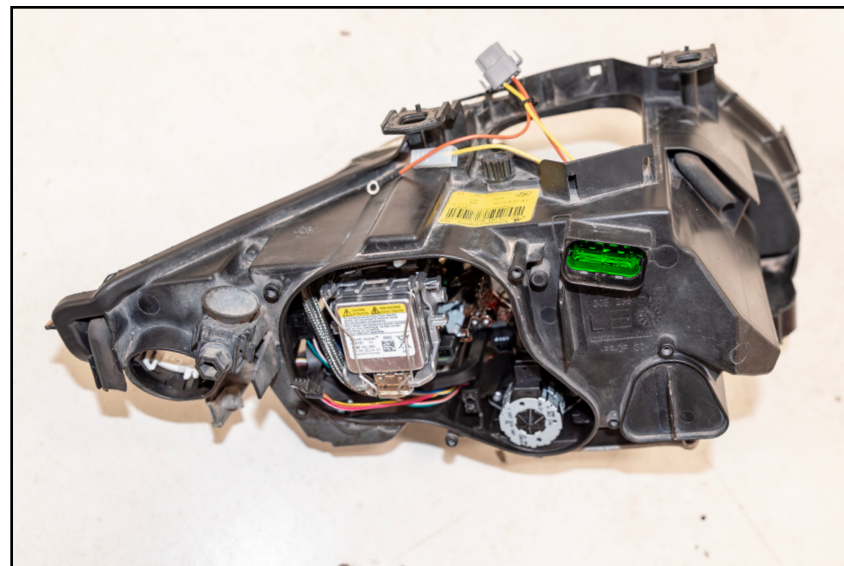
Step 23:

Slide the assembled harness back into the headlight, behind the DRL light tube bridge (highlighted in **GREEN**) as shown, then reinstall the screw (arrow)



Step 24:

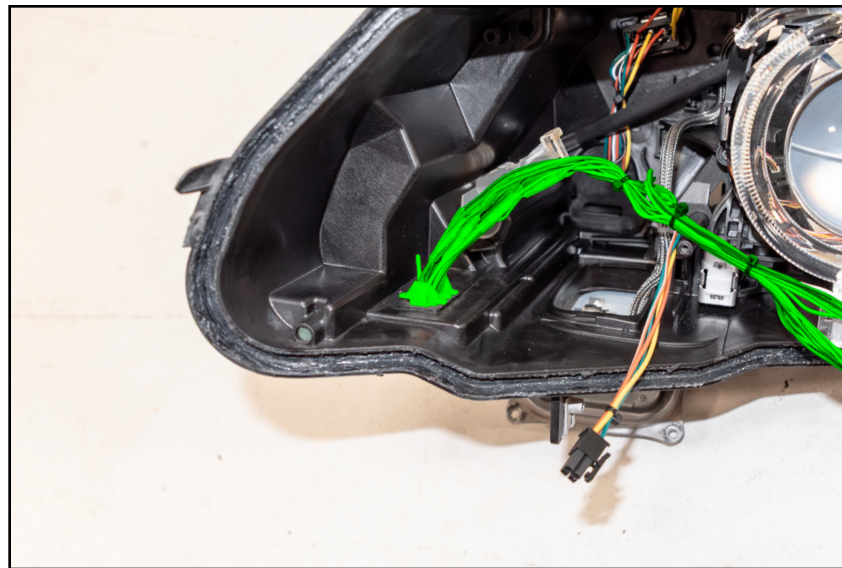
Slide the headlight wiring harness main connector (highlighted in **GREEN**) into the slot in the back of the headlight, ensuring it clicks into place.



WIRING HARNESS INSTALLATION

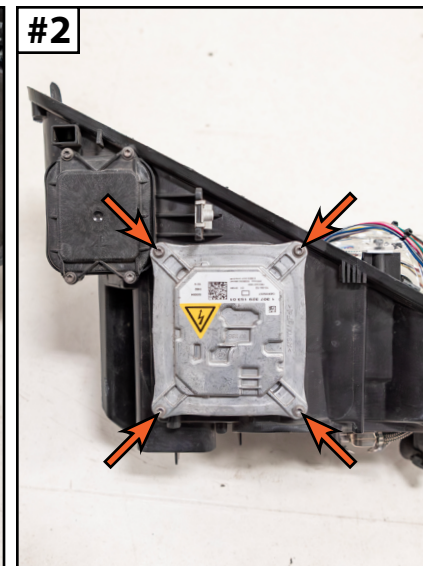
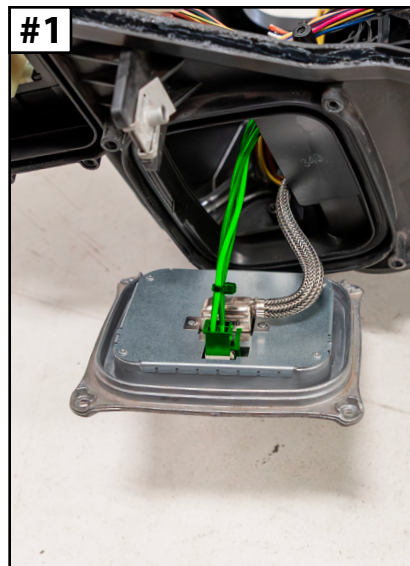
Step 25:

Connect the connector (highlighted in **GREEN**) to the headlight control module.



Step 26: T20 Torx Socket & Ratchet

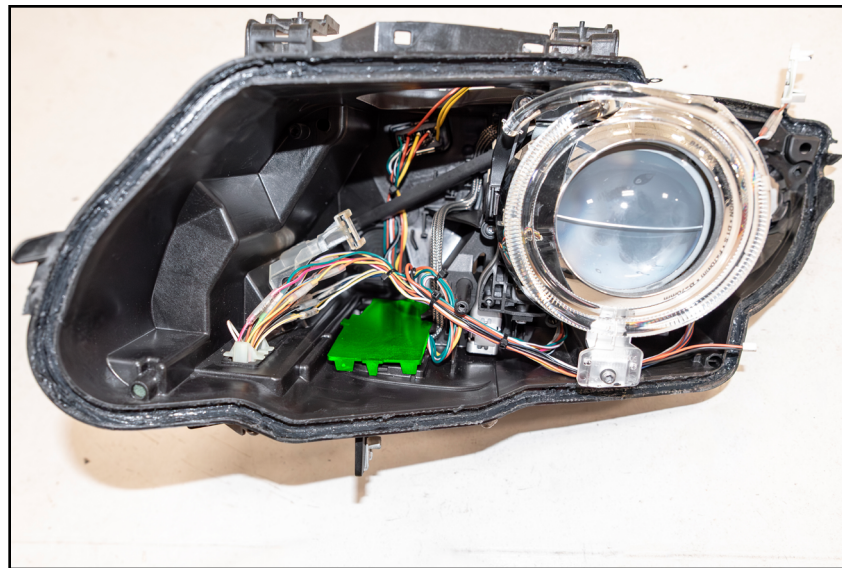
Connect the ballast connector (highlighted in **GREEN** in **Photo #1**) then reinstall the ballast into the bottom of the headlight and tighten the screws (arrows in **Photo #2**) until snug.



WIRING HARNESS INSTALLATION

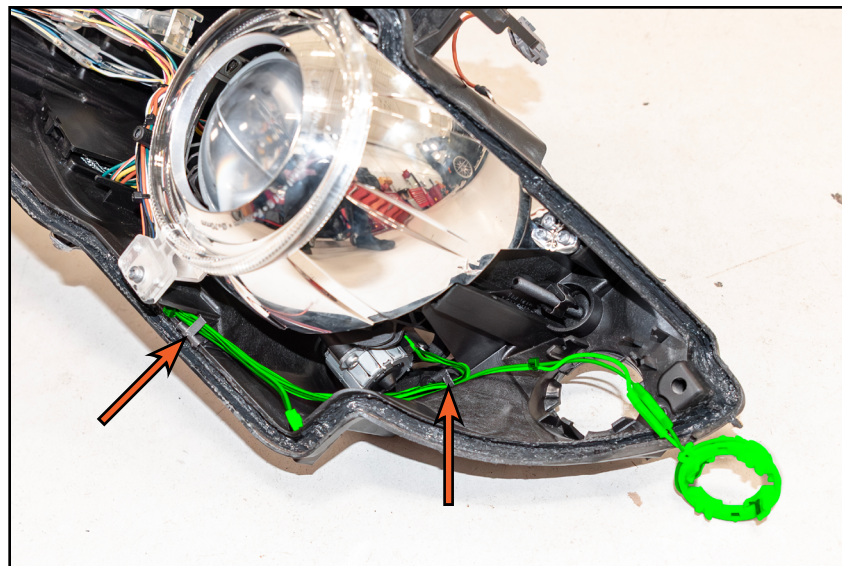
Step 27:

Reinstall the ballast cover panel (highlighted in **GREEN**).



Step 28:

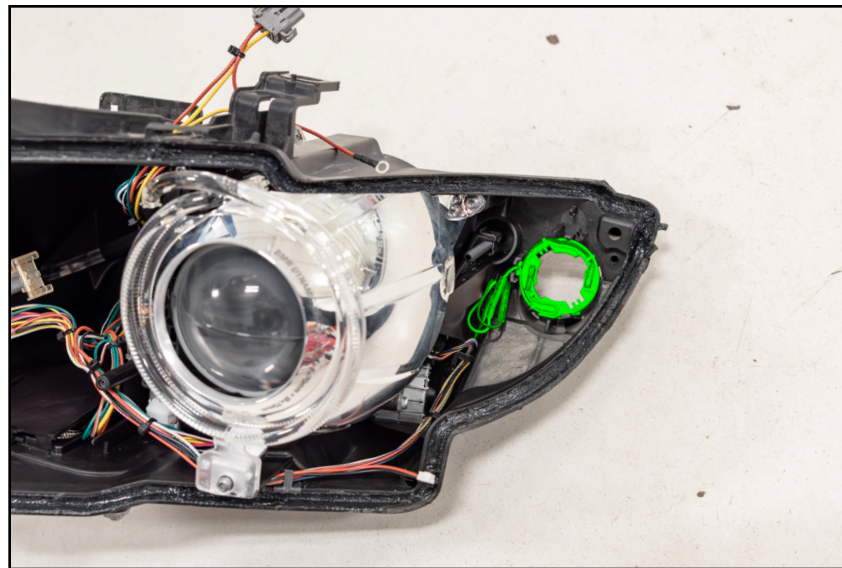
Reroute the headlight wiring harness (highlighted in **GREEN**) as it was before, reinstalling the clips (arrows) and connecting the headlight motor connector.



WIRING HARNESS INSTALLATION

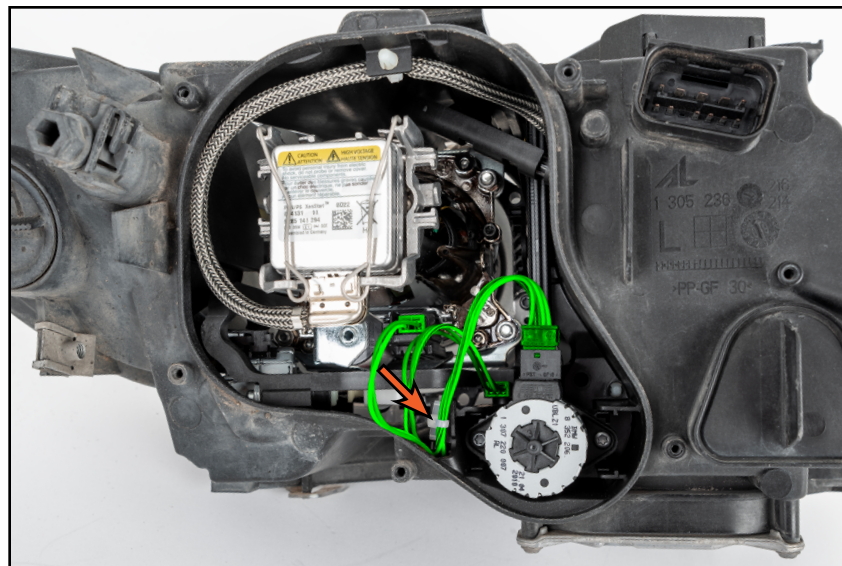
Step 29:

Install the turn signal bulb connector (highlighted in **GREEN**), ensuring it snaps into place.



Step 30:

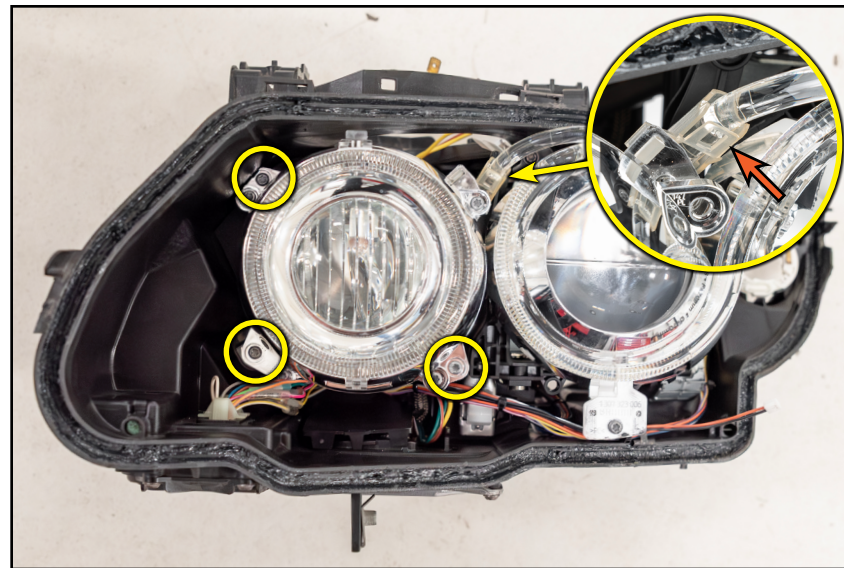
Connect the three connectors (highlighted in **GREEN**) at the back of the headlight and install the plastic retaining clip (arrow).



WIRING HARNESS INSTALLATION

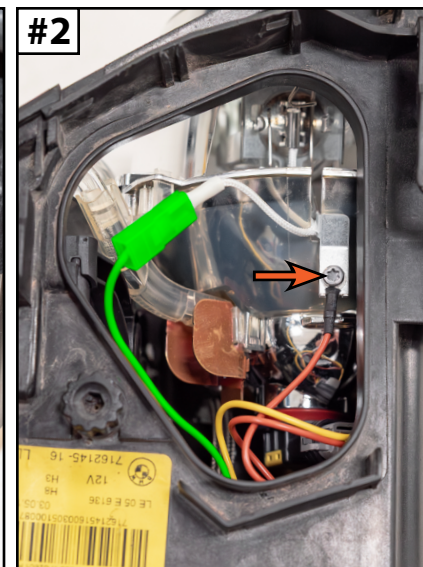
Step 31: T25 Torx Socket & Ratchet

Reinstall the high beam projector and tighten the three screws (circled in **YELLOW**) until snug, then reconnect the DRL light tube (arrow in inset photo).



Step 32: T20 Torx Socket & Ratchet

Connect the high beam bulb connector (highlighted in **GREEN** in **Photo #1**). Reinstall the screw (arrow) to connect the ring terminal to the projector and connect the spade connector (highlighted in **GREEN** in **Photo #2**). Reinstall the upper access cover.



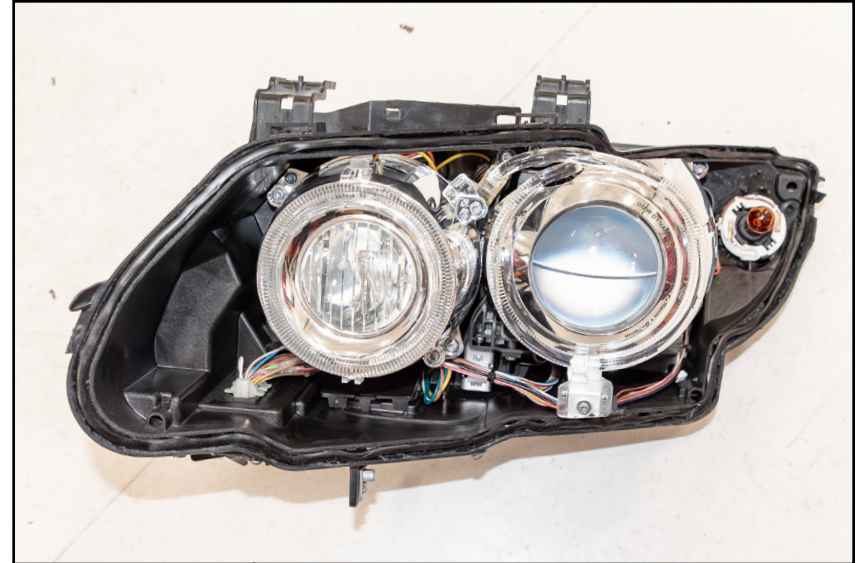
WIRING HARNESS INSTALLATION

Step 33: Heat Gun

Thoroughly clean the groove around the perimeter of the headlight, and the lens to remove any old rubber sealant, then clean both mounting surfaces with isopropyl alcohol and allow it to fully dry. Apply a continuous bead of rubber sealant into the groove as shown.



Compatible rubber sealant is available for purchase [HERE](#).

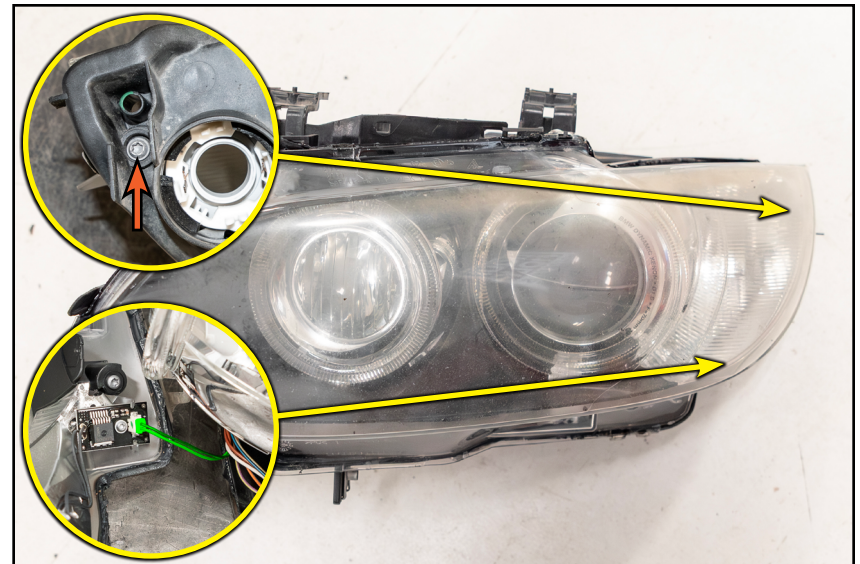


Step 34: Heat Gun, T25 Torx Socket & Ratchet

Evenly apply heat to the perimeter of the headlight and lens, softening the rubber sealant, then apply heat to the headlight lens to warm it up. Reconnect the small connector (highlighted in **GREEN** in lower inset photo). Align the lens with the groove on the headlight and push the lens into the sealant until the retaining tabs snap into place. Reinstall the screw (arrow in upper inset photo) to secure the outer corner of the lens to the headlight, then evenly apply heat around the perimeter of the headlight assembly to ensure proper adhesion of the sealant before allowing everything to cool.



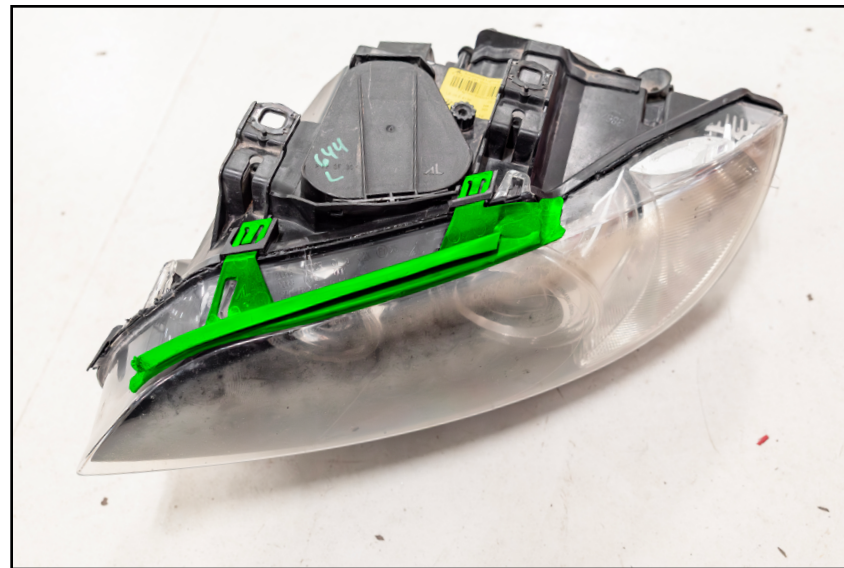
The lens can be lightly clamped onto the headlight using soft-jawed bar clamps while the sealant cools to ensure proper adhesion.



WIRING HARNESS INSTALLATION

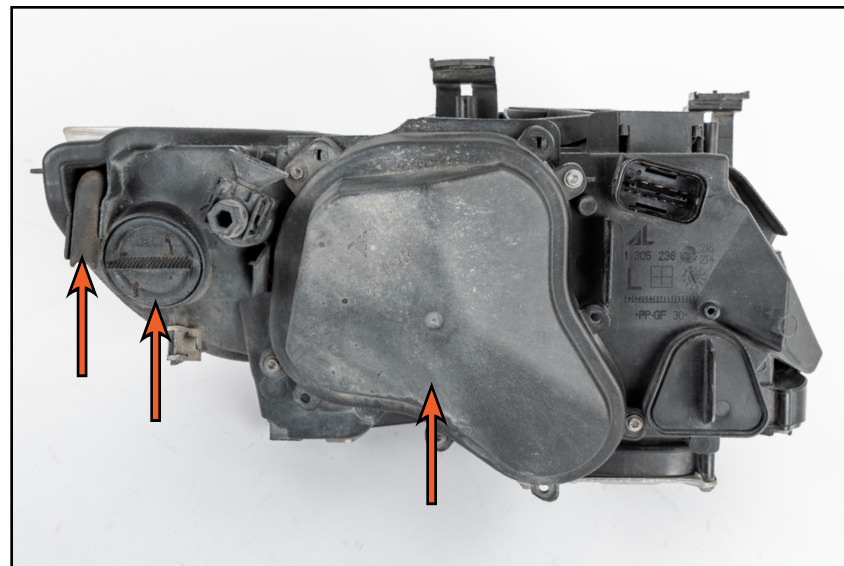
Step 35:

Reinstall the upper headlight gasket (highlighted in **GREEN**), ensuring the retaining tabs snap into place.



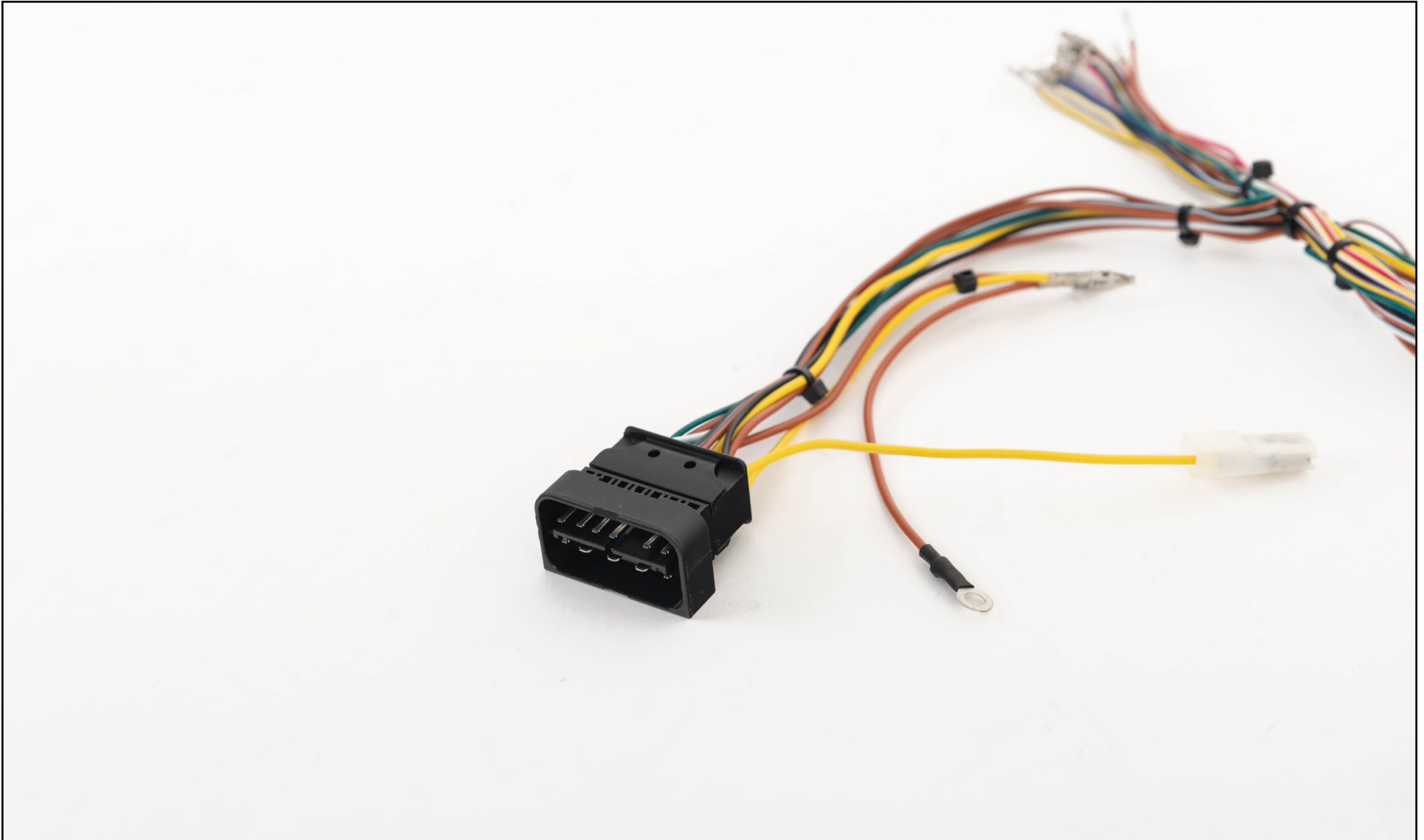
Step 36: T20 Torx Socket & Ratchet

Reinstall the turn signal bulb holder, vent tube, and rear access cover (arrows), tightening the screws until snug.



Congratulations, Your installation is complete!

Your Wiring Harness installation is complete!



These instructions are provided as a courtesy by ECS Tuning

Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

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