

V I N T A G E E X O T I C S

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PORSCHE 944 HEADLIGHT INSTALLATION

VE 2015.02



Installation Instructions

Background

The Porsche 944 Endurance Racing Headlights were designed for racing applications and are designed to be both durable and functional. No warranty for street use is given or implied and the installer accepts responsibility for their own installation for street use. The design relies on Hella light modules that comply with US DOT rules for low and high beam applications. European installations will be required to meet EU standards for light beam design which differ from US DOT standards. The light modules are water tight and OEM quality. The Vintage Exotics frames and covers are made with computer controlled laser cutting, bending and welding machines and are made to the highest quality standards in the USA. The light covers are vacuum formed to fit into the headlight opening and may require precise trimming to meet the individual opening of your car since body fit and manufacturing tolerances will vary from car to car.

Application

This technical memorandum applies to the Endurance racing headlight systems for Porsche 944 and 924 models sold through Vintage Exotics. The headlight system consists of the following components:

2 Headlight covers

2 Headlight brackets

4 headlight modules (Pro Kit only)

12 headlight adjusting nuts and screws (Pro Kit only)

2 Headlight adapter harnesses (Pro Kit only)

Aircraft grade rivets



Figure 1. Hella 90mm modules

If you purchased the basic kit, you will need to purchase the Hella 90mm modules. These are available at [amazon.com](https://www.amazon.com) or [jegs.com](https://www.jegs.com) and are normally stocked. For racing applications we recommend the following 90mm Hella modules (included in the Pro Kit):

4 - Hella 008191057 90mm 12V High Beam Halogen Headlamp Modules

For street applications and US DOT regulations regarding automotive headlights, we recommend the following:

2 - Hella 008191057 90mm 12V High Beam Halogen Headlamp Module

2 - Hella 008193027 90mm DE Series 12V Low Beam Halogen Headlamp Module.

The Hella modules come with Halogen H9 bulbs. Upgrades to HID lighting is recommended for racing applications or for high performance street applications. We recommend any brand 55W Xenon 6000K H9 HID Conversion for low and high beam light bulbs. LED bulbs also work and are becoming more commonly available.

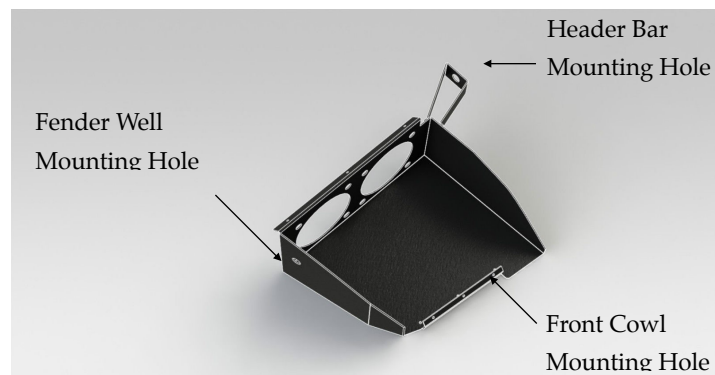
We recommend reading through the instructions before starting on the installation. This is a bolt in kit in 90% of the cases with no need for cutting or modifying the original car. This kit is typically installed by 'do it yourself' minded car owners and professional shops in some instances. This is an easy installation requiring only a minimal amount of mechanical skills. Some drilling and riveting operations are required but no cutting of the car should be necessary in most cases. Any installation questions can be addressed to installationquestions@vintageexotics.com. We will be happy to answer your questions and guide you through the installation.

Tools Required

The tools required for this installation are relatively minimal. A metric end wrench and socket set will be required to remove the headlights.

Installation

Begin by removing the factory headlight doors, mechanisms, hinges and actuators. Don't underestimate the amount of time required for this process. You will need to remove the headlight doors including the bulbs and supporting structures, the actuating motor and the headlight rise bar. We recommend keeping these pieces should a future owner decide to reverse the installation.



The aluminum headlight brackets are finished in bare aluminum. Many people prefer to leave it in this finish but others have used anodizing, powder coating and painting. If you decide to paint them, we recommend a satin black "wrinkle" finish paint. This is what is shown in the images from one of our own installations. Make sure that you sand and clean them before painting if you choose that route. It is our experience that the set be installed for a trial fit, removed, painted or finished and then re-assembled.

Mounting the Frames

The headlight brackets should fit inside of your factory headlight openings with no modifications on most of the Porsche 944's. There are three mounting points on each frame as shown in the accompanying figure. The header bar

mounting point connects to the frame OEM holes used for the headlight lifting mechanisms as shown in Figure 2. The forward portion of the bracket can either be bolted or riveted to the lower grill bar in the stock body.

Begin by mounting the Hella modules into the frames. This is done by first inserting the plastic sockets into the frame without the adjusting screws in place. Insert the adjusting screws into the Hella modules (3 total) and then gently press the adjusting screw balls into the plastic ball sockets. The modules mount and adjust from behind the frames for naturally aspirated cars and in front of the frames for turbo cars. See Figure 2 for naturally aspirated mounts and Figure 3 for turbo mounts.

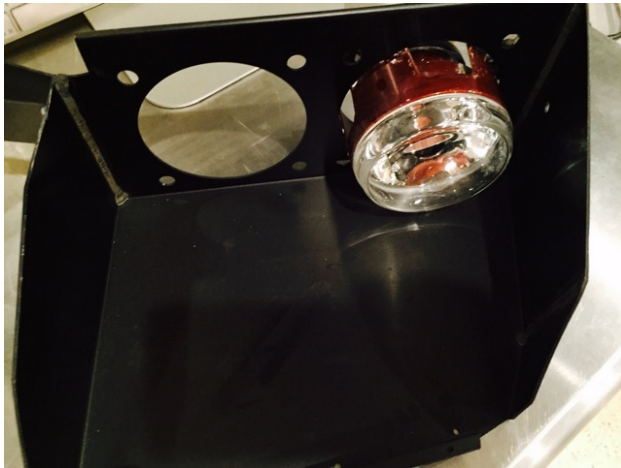


Figure 2. Naturally aspirated mounting



Figure 3. Turbocharged car mounting

Very early 944's and 924 models will require a modification on the fender well side of the headlight opening. The early cars have extended bosses on the outside fender well locations (Figure 4). The recommended procedure is to remove the portion of the sidewall with the offending bulge with a 2 inch hole saw as shown in Figure 4.



Figure 4. Removing headlight mounting point on early 944

Make sure to leave enough room for the side mounting hole in the frame to attach to the fender well. An alternative to cutting a hole is to use a hammer and to shrink the bulge. This is the most reversible operation but less precise.

Bolt the assembled frames into the opening with either the fasteners used to attach the original headlight mechanisms or new fasteners. It is recommended to use M5 fasteners as provided for the inner attachments and rivets as provided.

ed for the front and outside mounting points. Holes are provided for outside mounting of a M4 or M5 fastener on the outside fender well if desired.

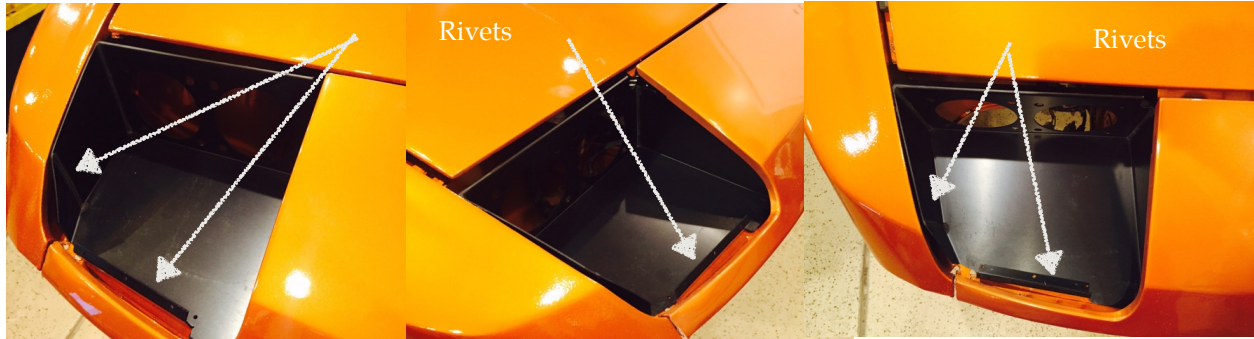


Figure 5. Attaching the frames to the body

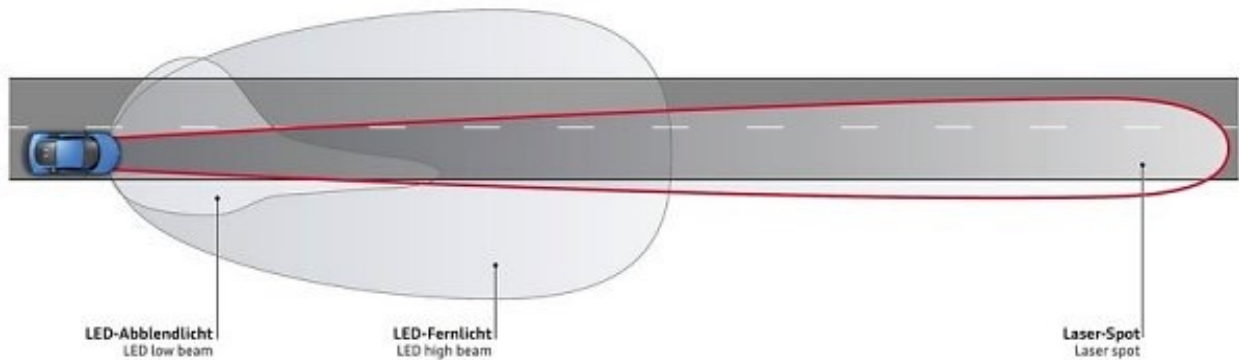
The Lexan lens covers are best mounted using rivets as supplied with the kit. Match drill the covers over the frames for riveting. Normally service of the components and adjustments (except the turbo configuration) are accomplished without needing to remove the cover. Water ingress in this design is minimal and periodic cleaning is not normally required. Covers can be removed by center drilling the rivets with 1/8 inch drill bits and replacing the rivets. This should not normally affect the usability of the rivet holes. More easily serviced alternatives include using rivet nuts or tapping the holes for use with threaded fasteners. The rivets supplied with the mounting kit are aircraft grade Cherry Rivets with aluminum bodies and stems thus no corrosion will be expected between the brackets and the rivets. Some trimming of the cover might be required to fit the opening. Its also important to note that the turbo covers and S2 Porsche 944's use a longer cover. The Lexan can be trimmed by sanding, grinding or cutting. Its a very durable material and responds well to being worked mechanically.



Figure 6. Attaching the covers to the frames

Electrical Hookup and Adjustment

The Pro kit includes a harness adapter that plugs the factory harness connection into the Hella bulbs. The Hella modules use a H9 connector and these are available at auto parts stores. We also sell the harness adapters on our online store. Once the electrical connections are made, check the placement of the high and low beam headlights. We recommend that the low beams be the outer bulbs and that they point inward for illuminating the central part of the



road. The inner light modules should be the high beams and can point outwards and upwards a bit more to illuminate the sides of the road and further down the path of travel.

Cosmetics

Many people choose to paint the lens cover to match the body and others leave them clear. Others use a painted interior black lip on the covers. Its simply a matter of preference. The same is true for the mounting brackets. In the installation example, we have chosen to install anodized frames.

