

**Headlights 101**  
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**Diablo A's**

History – the Model A was introduced with a single driving lamp (21 CP). The bulb had the filament directly in the center and the socket in the reflector was also directly in the center. These were referred to as the non-script “H” headlights, used until about April 1929. The two-light headlights replaced the single filament design with a high and low beam bulb and were used through the end of production. The reflector had the bulb socket mounted 1/16” above center so that the high beam would shine down the road further than the low beam. If you look at a two filament bulb you will see that one filament is positioned in the center (high beam) of the bulb and the other filament off center (low beam). When you install a bulb, the filament on center (high beam) is then exactly in the center of the reflector and the upper filament (low beam) is a 1/8” above the center line and is directed downward by the reflector. Original bulbs had the filaments shaped in a V that helped to focus the beam. The original bulb was a 32/32 CP number 1000; later a 50/32 bulb became available and is number 1188. US made bulbs were (are) made to exacting SAE specifications as to filament shape and placement in the bulb; this is critical to proper light beam generation. Foreign made bulbs may not be made to these SAE specifications. A 32 CP filament draws 3.5 amps and a 50 CP filament draws 4.3 amps.

Reflectors - a silver plated reflector was originally used. The notch in the reflector socket should be on the right as you face the headlight. Recently (spring 2013) Bratton's introduced an Aluminized reflector in a true parabolic shape with the socket offset like they were originally made. Some reproduction reflectors were not a true parabolic shape and the socket was not correctly positioned. If you need to replace your reflector either have them replated (if they are known originals) or buy the new Bratton's reflector.

Based on a sample of one, a shiny Silver reflector with a 32 CP bulb produced 500 Lux (light output). Bratton's Aluminized reflector, under the same conditions, with a 32 CP bulb produced 1500 Lux and a 50 CP bulb produced 2000 Lux. This person also tried a 6V, 35W Halogen bulb and it produced 2000 Lux also. This Halogen bulb drew 5.25 amps.

Alignment – the headlight assemblies can be moved in a circular pattern so they can point any which way! First loosen the nut under the headlight bar on both headlights so that you can move the headlight using a little force, you want it to stay where you place it. For horizontal alignment, lay a 4 foot straight edge across

the center of both headlight lenses; adjust the buckets to achieve 4 contact points at the 2 edges of each lens. For vertical alignment, you want 2 degrees down, which equals  $7/32''$ . You may have to do this a couple of times because one adjustment will affect the other.

Focus – can only be adjusted when you are using original headlight sockets. If you are using modern style Halogen bulbs in modified reflectors, they are non-adjustable.

You can follow the procedure in the Instruction Book or Service Bulletins to adjust the headlight focus one side at a time. The adjustment procedure is done using the high beam. The light switch positions are as follows: center down is off, right first position is low beam, second position is high beam and one position to the left is parking lights.

The following was extracted from Marco Tahtaras' website [www.abarnyard.com](http://www.abarnyard.com)

The picture below shows the results of the adjusting screw in 3 positions, first with the adjusting screw as loose as possible, allowing the bulb to move closer to the lens. Second, the screw is set at the bulb's focal point it shows a full concentration of light. Third, the screw is completely compressing the spring; the bulb is now furthest from the lens. You can see the difference in light intensity and sharpness that can be obtained when the adjusting screw is set correctly.