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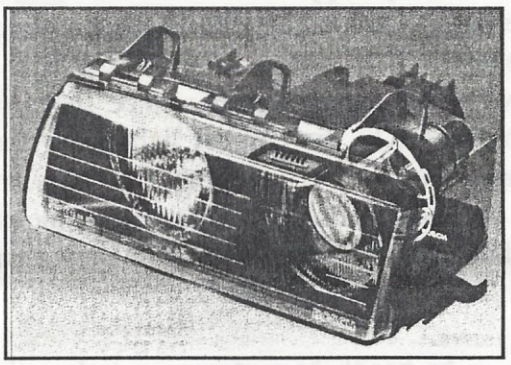
The actual gas filling the halogen bulb is usually iodine. Unlike the standard incandescent sealed beam, where the pressure is about the same inside as out, the halogen bulb has three to four times normal atmospheric pressure inside. So, if the bulb breaks or is overheated, glass is likely to go flying everywhere.

The halogen bulb is superior to the sealed beam for several reasons. First, it produces more light for longer periods of time. Advertising claims on the side of the box suggest 40% greater illumination using a halogen bulb. In the typical sealed beam, about 10% of the filament eventually evaporates and coats the inside of the bulb. This means that the amount of light able to get out decreases over time. The tungsten used in halogen lamps also evaporates; however, before it can get to the front lens, it combines with the gas inside the bulb. As the gas moves around inside the bulb, it eventually runs back into the filament, where the tungsten reattaches itself by returning to the filament, the tungsten stays off the inside of the bulb, preventing a significant loss of illumination.

Another big plus with the halogen headlight is that its only job is to be the source of light. Just like in the Model T's headlights, the filament is in a small glass bulb that can be replaced. There's no need to replace the reflector or to realign the headlights when a bulb is replaced.

The downside to the halogen bulb is cost, which can be easily twice that of an incandescent sealed beam. However, if you take into consideration how much quicker and easier it is to replace, how much longer it lasts and its improved light output, the halogen bulb is clearly the better deal.

From the service side, there are a couple of things to be aware of regarding halogen bulbs. The way the bulb gets rid of its heat is to transfer heat and light out by way of the gas inside the bulb and the glass outside it. Anything that interferes with this will cause the bulb to overheat, shortening its life. The chief culprits here are fingerprints and dirt. You don't want to touch the glass as you install the bulb, because the oil from your skin can cause the light to be reflected back into the bulb, raising its temperature. The silicone rubber gasket at the bulb base is designed to keep dirt out of the reflector housing and off of the bulb surface. Make sure the gasket is in good shape prior to bulb replacement.



An even more expensive headlight system is moving into the luxury car market. In this country it is called High Intensity Discharge (HID). In Europe, they prefer the GAL label (gas discharge lamp). There are three components to this system . The lamp itself has no filament. Inside is a glass bulb filled with mercury, xenon and metal salts in the form of gases, and two electrodes separated by an arc discharge gap. This is somewhat like a spark plug gap, with the exception being the electrode ends are like small nail heads with a gap between them of about 4MM.

These bulbs need much more voltage to operate than the normal 12 volts used in conventional lighting systems. An electronic

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