9004 and 9007 Bulbs

What are the differences? They look interchangeable—but they’re not.

The 9004 (HB1) bulb, introduced in 1983, was the first halogen replaceable headlight bulb available for use in North America. It uses 12 Volts, has a 45 Watt low beam filament producing 700 lumens, and a 65 Watt high beam filament producing 1200 lumens. These filaments are transverse—if you hold the bulb upright, they run across the bulb from side to side.

The 9007 (HB5) bulb, introduced in 1992, uses 12 Volts, has a 55 Watt low beam filament producing 1000 lumens, and a 65 Watt high beam filament producing 1350 lumens. These filaments are axial—if you hold the bulb upright, they run along the bulb from top to bottom.

9004 and 9007 bulbs are keyed differently, so they can’t be interchanged, but the higher light output of the 9007 tempts some people to try making 9007 bulbs fit in headlamps designed for 9004 bulbs.

This is not an upgrade, and it’s unsafe. It’s important to use the specified bulb.

Each headlamp is designed to use only one type of headlamp bulb. It may be a 9004, a 9007, or some other type. Headlamps are optical instruments, and they depend on the filament being very precisely oriented and placed exactly how and where it’s supposed to be, in order to form a beam pattern with the right amounts of light in the right places.

If the filament is improperly oriented or placed because the wrong kind of bulb is used, the headlamp’s optics won’t see what they’re expecting to see, and they won’t be able to do their job. The result will be a damaged beam pattern that won’t provide safe seeing light for the driver, and will cause blinding glare for other road users.