General

The headlamp contains a xenon lamp with ignition transformer, control module, headlamp levelling motor, halogen bulb and parking light bulb.

A 70mm ellipsoid lens forms the light pattern together with the xenon lamp and reflector. The headlamp is equipped with a clear plastic protective lens that does not refract the light.

There is a halogen bulb mounted in the lamp housing. Only the halogen bulb lights up when the main beam flashers are used while the dipped beam is turned off.

The halogen bulb does not come on simultaneously with the xenon lamp for main beam on the US/CA/JP markets.

On other markets, the halogen bulb comes on together with the xenon lamp for main beam.

Xenon lamp
The xenon lamp is a gas discharge lamp and therefore does not have a filament. The light is generated by an electrical discharge between two electrodes. The igniter is the capsule in which the discharge takes place and is filled with xenon gas and metal halogens under high pressure.
The xenon lamp is driven by the headlamp/AHL control module. The control module sends high voltage pulses to the ignition transformer for turning on the lamp. The ignition transformer, which is integrated in the xenon lamp, generates the ignition voltage (approx. 23,000 volts) that is required to turn on the lamp. Once discharge is in progress, the voltage requirement will drop to around 85V.

**Important**

When changing a bulb, select a new bulb of the correct rating to prevent the components being damaged.

**Solenoid, xenon lamp shutter**

Dipped beam, xenon lamp screened

**Main beam, xenon lamp unscreened**
Xenon lamps always light with the same brightness. The light beam from a xenon lamp is limited by a shutter which is opened for main beam use by a solenoid to increase the beam of light from the lamp. B+ voltage is fed to pin 2 on the headlamp and the solenoid opens the lamp shutter.

Control module, headlamp/AHL
There is a control module located inside the headlamp housing that governs the supply of current/voltage to the xenon lamps. The control module also governs the stepping motors for the automatic headlamp levelling. The control module receives information on the angle of the car from the load angle sensors and regulates the angle of the headlamps based on that information.

**Headlamp levelling motor**
There is a stepping motor located in each headlamp housing. The headlamp levelling motors change the angle of the headlamps according to instructions from the headlamp/AHL control module.