



## Genuine BMW Alternators

- **Small, light, powerful**
- **Resistant to vibration up to 80 G for long operating life**
- **Voltage stable up to 350 volts**
- **Complex construction for long operating life**
- **Genuine BMW water-cooled alternators: improved power output**

### Function in detail

Alternators are driven by the engine to produce electrical power for all the car's ancillary components.

- The typical electrical consumption of an automobile amounts to approx. 400 watts. The peak consumption of a fully equipped BMW 750iL (which has up to 83 electric motors on board) during starting is close to 2,000 watts. At lower temperatures this would increase to almost 4,000 watts.
- BMW offers three alternator types: Pot alternators, compact alternators and water-cooled alternators.
- A transducer is integrated into the alternator to ensure the electrical system receives the required DC voltage.

**Alternators are matched to the respective performance characteristics of the vehicle, as every electrical component in a BMW depends on them.**

### Benefits

#### Small, light, powerful

Genuine BMW Alternators are matched to the performance characteristics of the respective vehicle. Their complex construction enables a compact design, lighter weight and quieter operation. The result is greater reliability and lower fuel consumption.

#### Resistant to vibration up to 80 G for long operating life

Genuine BMW Alternators are resistant to vibration up to 80 times the force of the Earth's acceleration (G) (in comparison, the lateral acceleration of a Formula 1 car under cornering reaches a maximum of 4G). This means that Genuine BMW Alternators are completely protected against damage caused by vibration.

#### Voltage stable up to 350 volts

Genuine BMW Alternators must exhibit voltage stability up to 350 volts. This prevents failures from voltage spikes in the vehicle's electrical system and ensures a reliable supply of current for charging the battery and for electrical components.

#### Complex construction for long operating life

Genuine BMW Alternators feature advanced welded and brazed connections, wider anti-friction bearings, a higher brush life and a high grade surface protection that effectively protects against dust and water. This means that they work reliably even under extreme loads, have a long operating life and are maintenance free during their entire service life.





### **Genuine BMW water-cooled alternators: improved power output**

Genuine BMW water-cooled alternators have many advantages, compared to other types of alternator.

- These alternators are integrated into the cooling circuit of the engine and can thus dissipate their heat via conductivity.
- They do not require a collector ring, work even at rotational speeds of 20,000 revolutions per minute, and are completely encapsulated.
- As a result in normal operation the noise emissions are further reduced. At 15,000 revolutions this results in a reduction of over 20 decibels in comparison to air-cooled alternators. Only 2 to 3 decibels are still audible in the inside of the vehicle!
- Water-cooled alternators also contribute to the reduction of emissions as the catalytic converter can be installed closer to the exhaust manifold.

### **Quality assurance**

**Genuine BMW Alternators undergo stringent tests to guarantee high reliability. Whether for new components or Genuine BMW Exchange Parts there is a 100% final inspection of every individual alternator.**

Every individual Genuine BMW Alternator is checked on a separate test rig before it is sold. Only if the voltage engine speed characteristic curves under specific temperature conditions are a 100% match for the specifications (e.g. power, efficiency, voltage characteristics, regulator cut off) will the Genuine BMW Alternator be approved for installation.

### **Further checks for every new series.**

Additional data is collected for every produced alternator of a new series to monitor production precision. The belt pulley gap, dimensions including screws and clamps, housing orientation, starting torque and welded seams are all precisely checked.

### **Certified to ISO 9000**

The exact testing criteria for Genuine BMW Alternators are kept under the utmost secrecy for competitive reasons. The requirements, however, far exceed the typically required criteria. Genuine BMW Alternators are certified to ISO 9000 and beyond.

### **Advantages of Genuine BMW Alternators**

- Smaller, lighter, more powerful
- Resistant to vibration up to 80 G for long operating life
- Voltage stable up to 350 volts
- Genuine BMW water-cooled alternators: improved power output
- Higher reliability with lower fuel consumption
- Maintenance free
- 100% final inspection of every individual alternator

### **Please note:**

Because of their construction, alternators are the ideal exchange part, offering the same quality and performance characteristics as new parts. See also the "**Exchange Parts**" chapter (electromechanical).

