

ZOOM

FOCUS ON TECHNOLOGY



PRODUCT COMPARISON

Always the energy
your vehicle needs
Alternators.



in collaboration with  **DEKRA**

Genuine Parts
HIGH PERFORMANCE

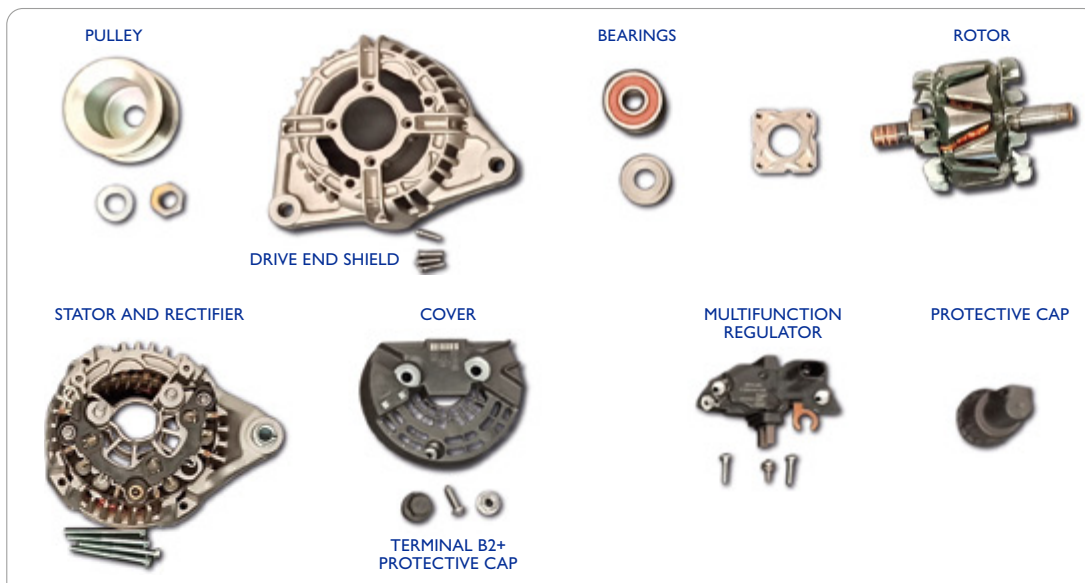
How it is made.

Specifically designed for the needs of your vehicle.

Vehicles are equipped with an increasing number of energy-consuming devices. The demand for electric energy can vary a lot depending on vehicle configuration, mission and operating conditions. It is not only the quantity but also the quality of electrical energy which is provided by the Alternator. IVECO Genuine Alternators are designed to supply stable electrical energy needed by your vehicle in any situation for all its components:



- Engine control system: ECU, injection system ...
- Safety systems: ABS, ESP, ...
- Electrical devices: wipers, heaters, infotainment ...
- Battery: to ensure the starting of the engine and provide energy when the engine is switched off.



Main components and functionality of an alternator.

The main components of an alternator are:

Rotor

Stator

Diode

Voltage regulator

- When the belt makes the pulley to move, the rotor spins fast
- The rotor is made by an electric coil which generates a magnetic field
- The stator induces an alternate current (AC) when the magnetic field rotates
- The diode bridge rectifier transforms the alternate current into DC
- The Voltage regulator keeps the voltage constant by switching on and off the electric coil

All IVECO Genuine alternator components have been developed with high durability and quality materials for ultimate, consistent, and long lasting performance.

How it is tested.

IVECO Genuine alternator was tested along with two alternators offered as After Market alternatives to IVECO Genuine.

All tests were carried out by the independent German test institute DEKRA, in its network of laboratories, according to International and Dekra Standards to assess the essential functional characteristics of the products and their components.

The main purpose of the tests was to compare the alternators at the common operating conditions as well as in the most demanding situations for the vehicle.

The endurance test was designed to reproduce the life of the alternators and check their behaviour with ageing. The analysis of the results focused on 3 different parameters: **Performance, Durability** and **Safety**.



About Dekra.

DEKRA has been active in the field of safety for more than 90 years. Founded in 1925 in Berlin as Deutscher Kraftfahrzeug-Überwachungs-Verein e.V. (German Motor Vehicle Inspection Association), today it is one of the world's leading expert organisations.



The results.

IVECO Genuine alternator top performer in all key areas.

The tests show how IVECO Genuine alternators obtained top results in all the key areas

Performance

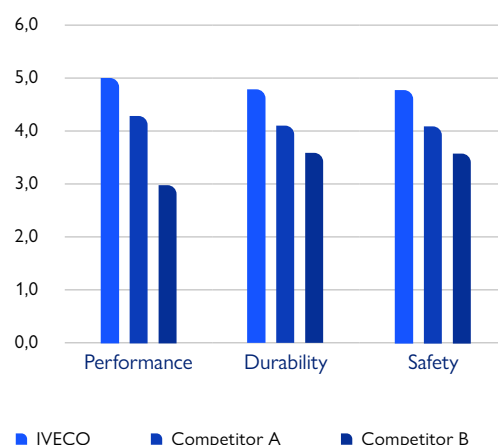
All necessary power at any operating conditions.

Durability

Long lasting top performance.

Safety

Ensure functionality even in the most demanding conditions.



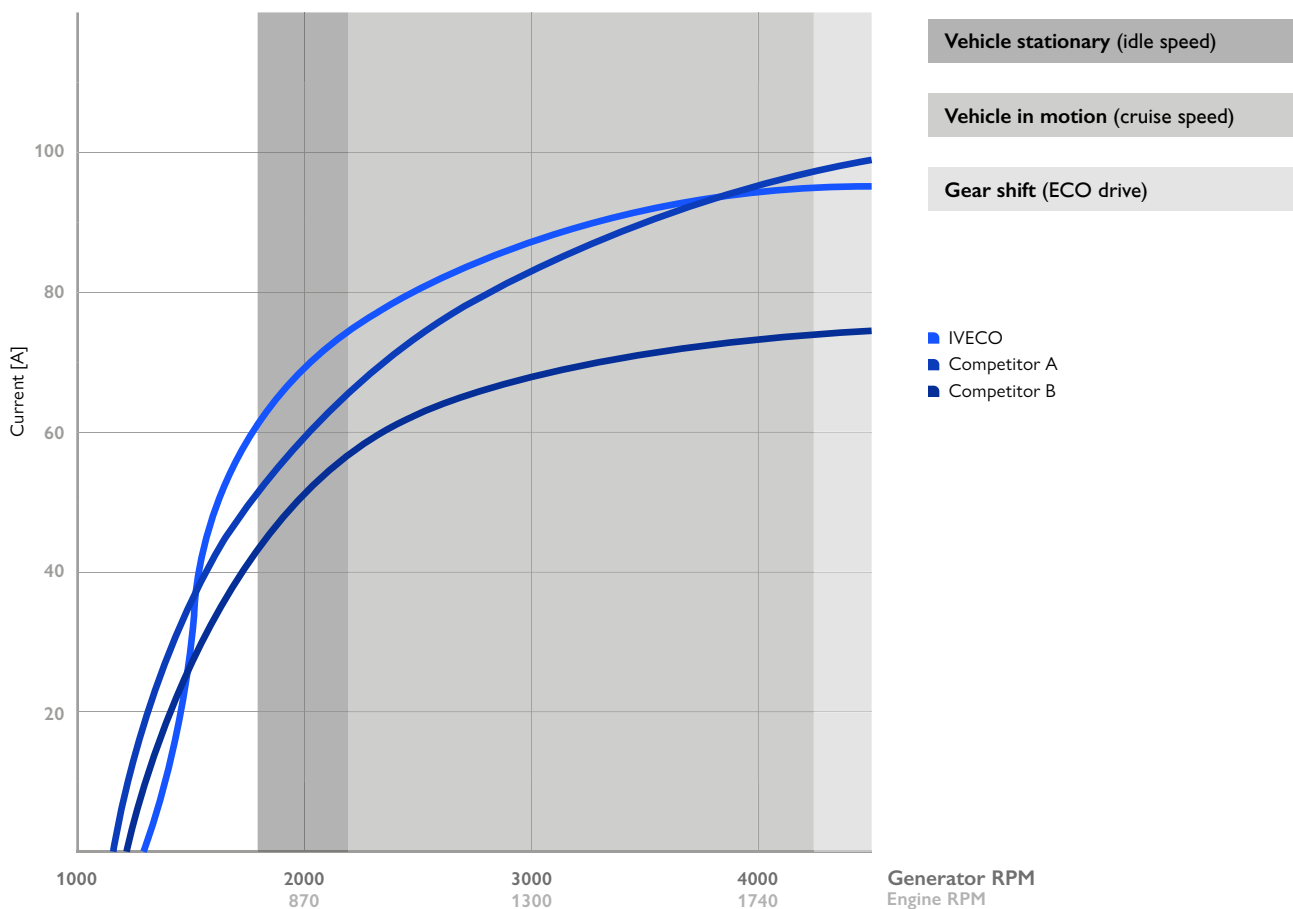
Performance.

Test for energy production at the right stage of the vehicle mission.

The performance test measures the electric energy produced by the alternator at a progressive rotation speed of the pulley, corresponding to the different conditions of the engine during the vehicle mission. The alternator works most of the time between 1.800 and 4.200 RPM, that corresponds to the vehicle at idle or cruise speed. The test demonstrates how IVECO Genuine alternator performs better alongside the normal operation time.

Competitor A can produce more current only above 4.000 RPM, in proximity to standard drive gear shift area. The most critical situation is when the vehicle is stationary and engine at idle: the battery has the highest current demand and the alternator the lowest current generation.

At the worst conditions, corresponding to idle speed (for example in a traffic jam), IVECO Genuine Alternator produces up to 30% more current than competitors A and B.

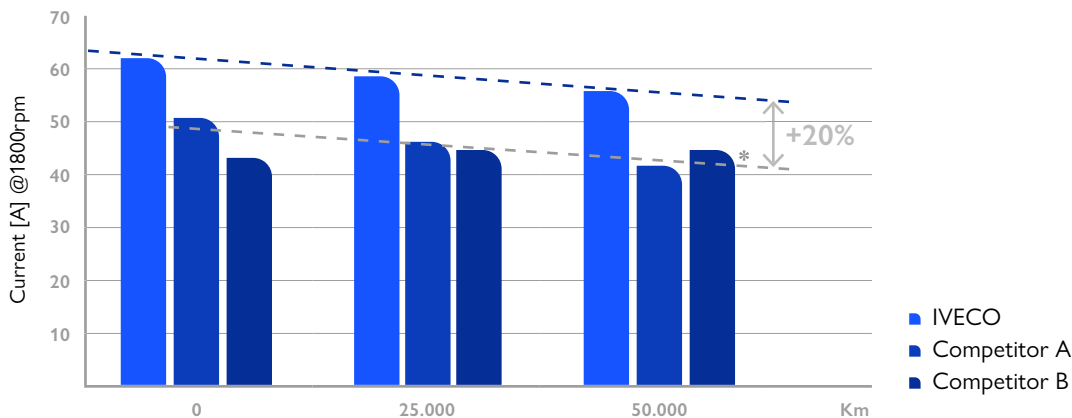


ONLY IVECO GENUINE ALTERNATOR IS ALWAYS EFFICIENT EVEN AT LOW ROTATION SPEEDS (E.G. ENGINE AT IDLE) AS THE HIGH POWER OF THE ALTERNATOR MEANS ENSURING THE FULL OPERATION OF ALL ELECTRICAL SYSTEM AND A GOOD RECHARGE OF THE BATTERY.

Durability.

Test for alternator performance along its life cycle.

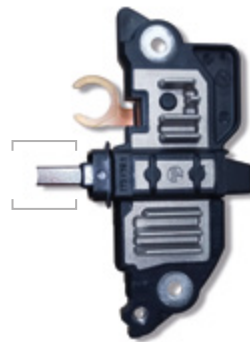
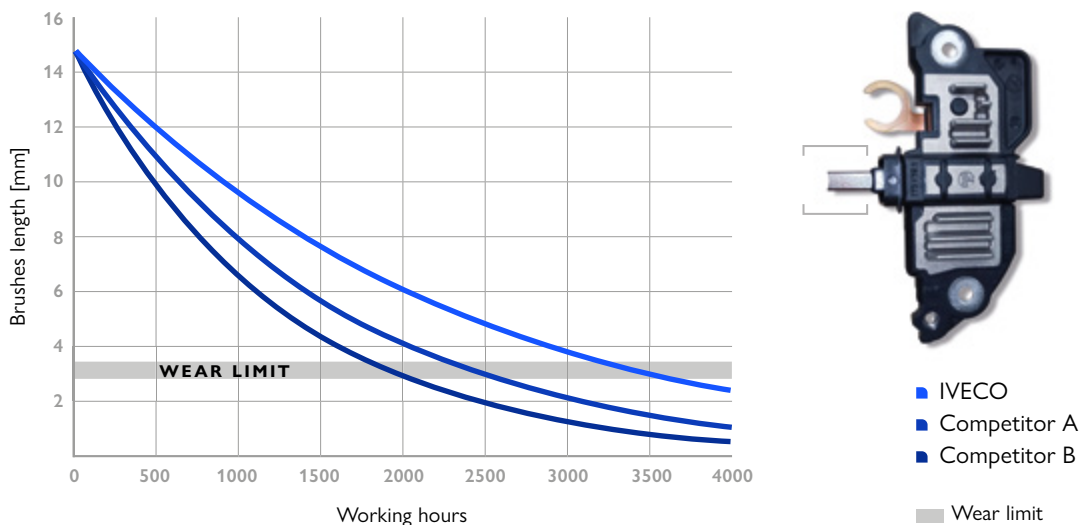
Endurance test measures how the alternator performs with ageing. During the test the alternator is subject to acceleration and deceleration cycles at a temperature of $90\pm 10^{\circ}\text{C}$. Test duration is 16.000 cycles corresponding to about 50.000 km, divided into two steps (8,000 cycles each). The test results at 1.800 rpm (engine at idle) show how IVECO Genuine alternator provides the highest current level even after 16.000 cycles. At the end of the test, IVECO Genuine alternator produces 20% of current more than competitors A and B.



*Competitor B even though has a little increase in performance (probably due to running in), at the end of the test is still producing 20% less than IVECO New Genuine.

Regulator brush wear analysis.

The regulator brush wear has been analysed by measuring the brush length before and after the endurance test. Results show that the Genuine regulator brushes could resist for more than 3.500 working hours, up to 70% longer than competitor.



- IVECO
- Competitor A
- Competitor B
- Wear limit

IVECO GENUINE ALTERNATOR TEST RESULTS DEMONSTRATED BETTER PERFORMANCE ALONG THE LIFE CYCLE AND PROVED TO BE MORE RESISTANT TO WEAR.



Safety.

All the charge your vehicle needs.

IVECO Genuine provides excellent power output at the most severe driving conditions even in the long term. It ensures a safe engine starts thanks to an optimal and quicker battery recharge and keeps the electric system in good health.



Only the IVECO alternator has the protection cover on spare terminal B2+ to avoid the risk of any unwanted contact with other components and preventing short circuit or at worst fire.

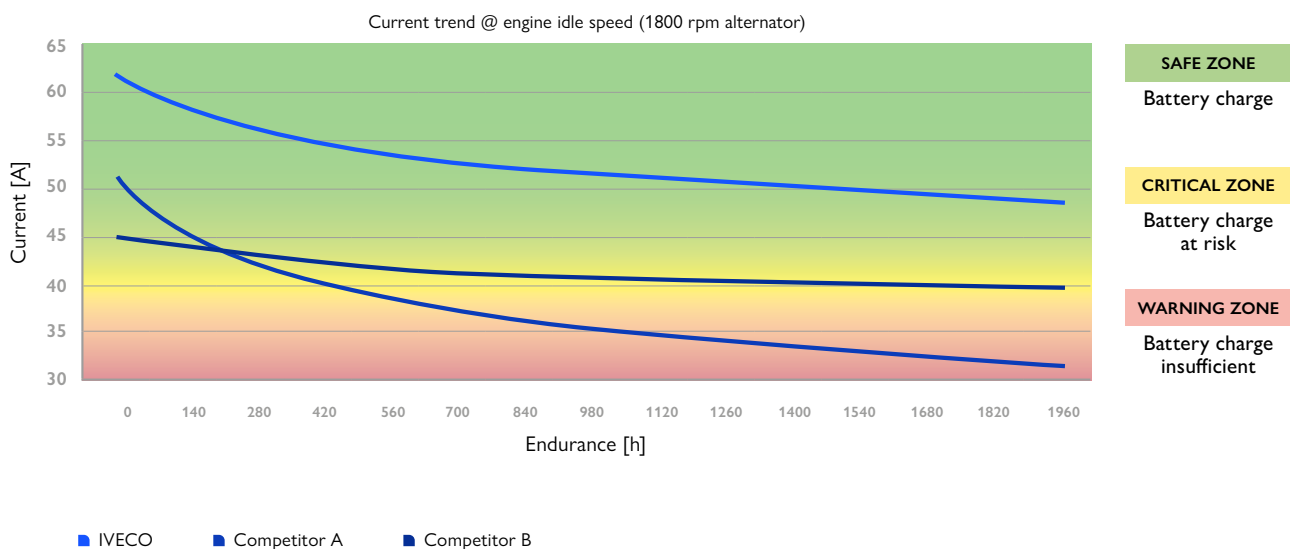
BY OFFERING THE BEST PERFORMANCE EVEN IN THE MOST CRITICAL SITUATION, IVECO GENUINE ALTERNATOR WILL ALWAYS ENSURE AN OPTIMAL RECHARGE MINIMISING THE RISK OF BATTERY FAILURE.



Conclusion.

IVECO Genuine alternators are designed to always supply to the vehicle the necessary and stable current.

During Endurance testing the performance gap between Genuine Alternator and the competitor's alternator increases. With ageing the performance of competitor alternator may not be sufficient to ensure battery charge, with the risk of not having enough electricity for an engine start or keeping vital electrical components working correctly.



ONLY ALTERNATOR IVECO GENUINE CAN GIVE YOU TOP AND CONSISTENT PERFORMANCE AT ANY CONDITION, PROVIDING THE REQUESTED CHARGE AND KEEPING THE BATTERY IN GOOD HEALTH EVEN IN THE LONG TERM.

IVECO

Drive the road of change

PUBLICATION 06/24

The information and images in this catalogue are provided as a guideline only. IVECO reserves the right to make changes for any commercial or construction reasons at any time without notice.