ALTERNATOR

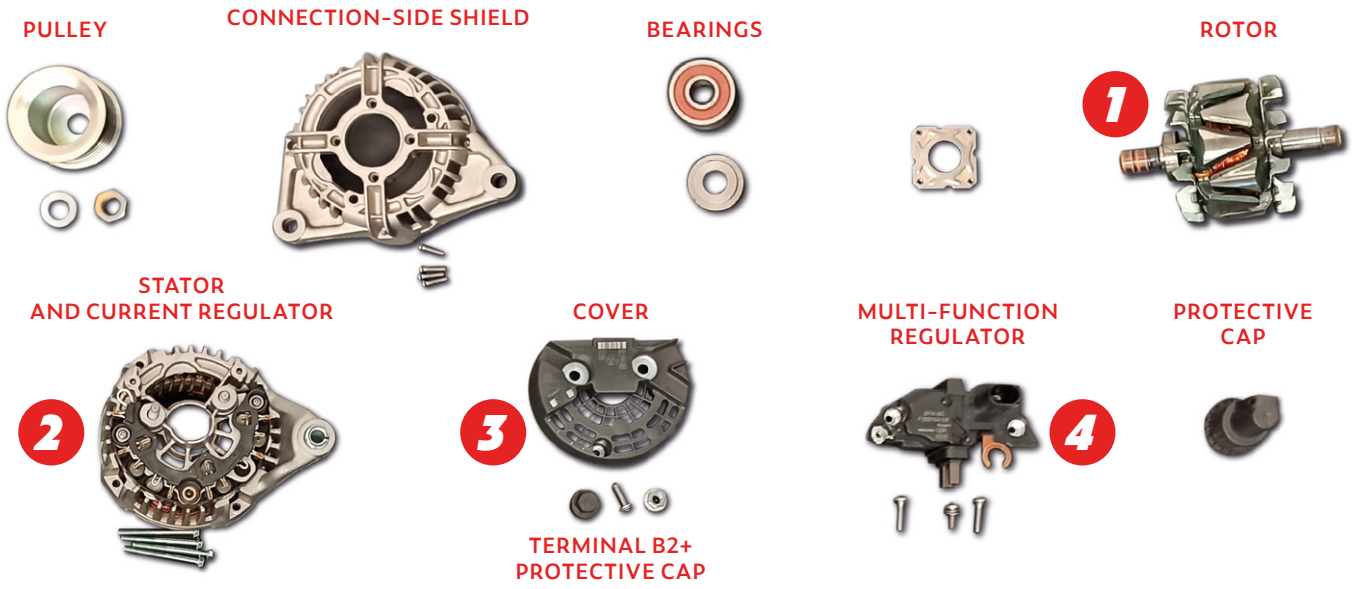
KEEP YOUR ENERGY LEVELS UP

PARTS & SERVICE

Genuine Parts

How Alternators Work

Vehicles are equipped with an ever-growing number of devices which consume electrical energy. The electricity demand can vary depending on the equipment configuration, use and working conditions.
It is not only the quantity, but also the consistency of the electricity supplied by the alternator. Original FPT alternators are designed to supply stable electricity required by your equipment under any situations for all your components, such as the control and management systems, electrical devices, and battery charging in use on your vehicle/equipment.



Main components and functions of an alternator.

The main components of an alternator are:

1 ROTOR 2 STATOR 3 DIODE 4 VOLTAGE REGULATOR

The operating logic of an alternator is as follows:
1) The serpentine belt drives the alternator's pulley, therefore also the rotor
2) The rotor is joined to the electric coil, which generates a magnetic field
3) The rotation of the coil with respect to the stator generates alternating current (AC)
4) The alternating current is converted by a set of diodes known as a bridge rectifier into direct current (DC).

The voltage regulator keeps the voltage constant by switching the electric coil off and on, even though this is continuously rotating.
All components of original FPT alternators have been developed with durable, high-quality materials for excellent, constant and long-lasting performance.

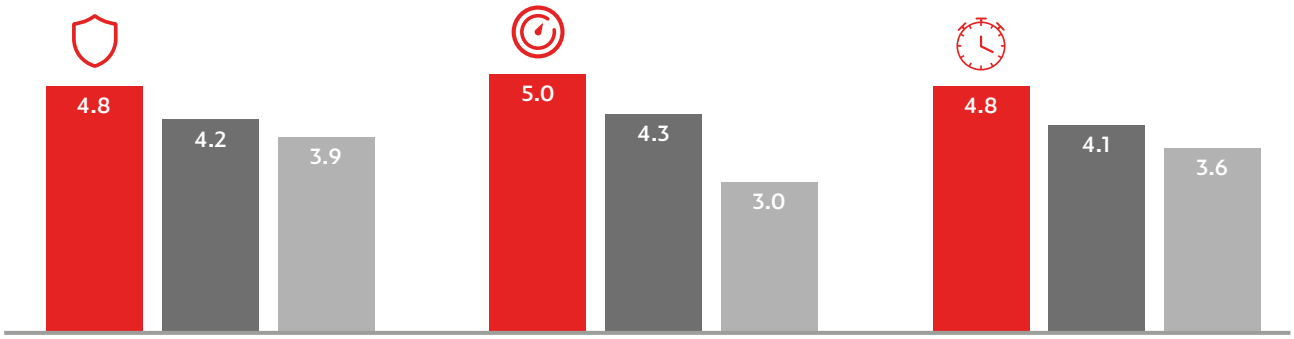
Original Alternator Performance

An FPT Genuine alternator was tested alongside two alternators offered as aftermarket alternatives to FPT Genuine.
All tests were carried out by an independent external institute in its own network of laboratories, following international standards for evaluating the essential functional characteristics of products and their components.

The main scope of the tests was to compare the alternators in their normal operating conditions and under the most demanding conditions for the vehicle/equipment.
The durability test was designed to reproduce the lifetime of the alternators and assess their behavior with ageing.

The analysis of the results concentrated on different parameters:
PERFORMANCE, DURABILITY AND SAFETY.

COMPARISON WITH COMPETITORS



SAFETY
Guarantee operation even in the most demanding conditions.

PERFORMANCE
All the power needed under any operating condition.

DURABILITY
Maximum performance over a long service life.

FPT Competitor A Competitor B

THE ORIGINAL FPT ALTERNATORS PERFORMED BETTER IN ALL KEY SECTORS.

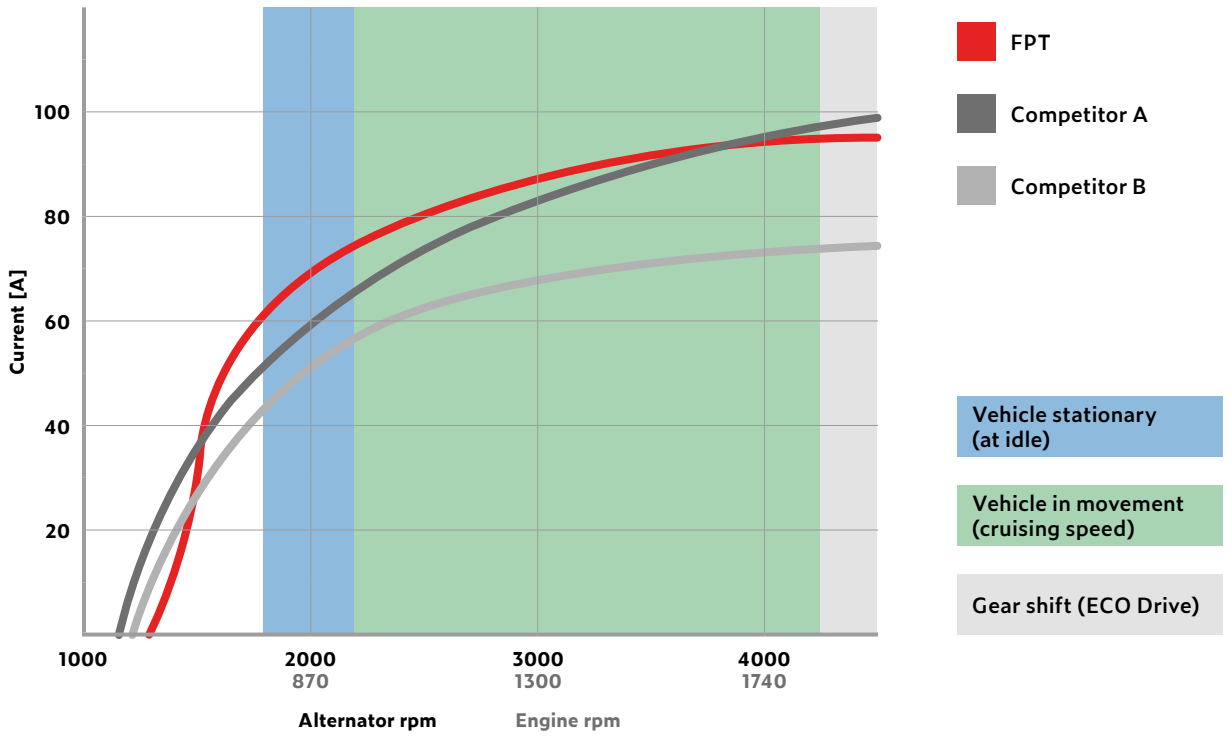
Test of energy production in the vehicle mission.

The performance test measures the electrical energy produced by the alternator on the basis of the progressive rotation speed of the pulley, as a simulation of the different engine conditions during the vehicle mission.

The alternator runs the majority of the time between 1,800 and 4,200 rpm, which corresponds to the vehicle idling and at cruising speed. The test demonstrates how the FPT Genuine alternator worked better within the normal operating time.

Competitor A generated more current only above 4,000 rpm, near the limit for changing gears under ideal driving conditions.
The most problematic situation occurs with the vehicle stationary and the engine idling: the battery has its maximum current draw and the alternator is generating its minimum current output.
Under the worst-case conditions, corresponding to engine idle speed (for example in a traffic jam), the FPT Genuine alternator produced up to 30% more current than competitors A and B.

PERFORMANCE COMPARISON



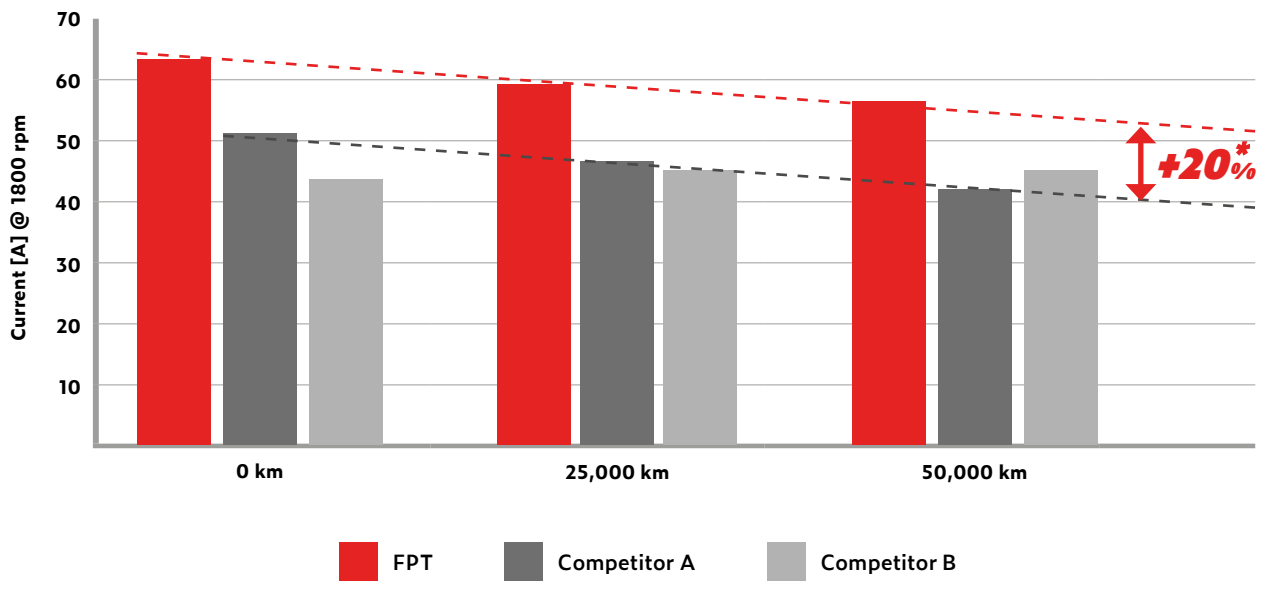
ONLY THE ORIGINAL FPT ALTERNATOR WAS ALWAYS EFFICIENT, EVEN AT LOW RPMS.

Alternator Lifecycle Performance Test

The durability test measured the performance of the alternator with respect to its ageing. During the test, the alternator underwent acceleration and deceleration cycles at a temperature of 80-100 °C. The duration of the test was 16,000 cycles, corresponding to approximately 50,000 km divided into two phases (8,000 cycles each).

The results of the test at 1,800 rpm (engine at idle) show how the original FPT alternator provided the maximum level of current even after 16,000 cycles. **At the end of the test, the FPT Genuine alternator produced 20% more current than competitors A and B.**

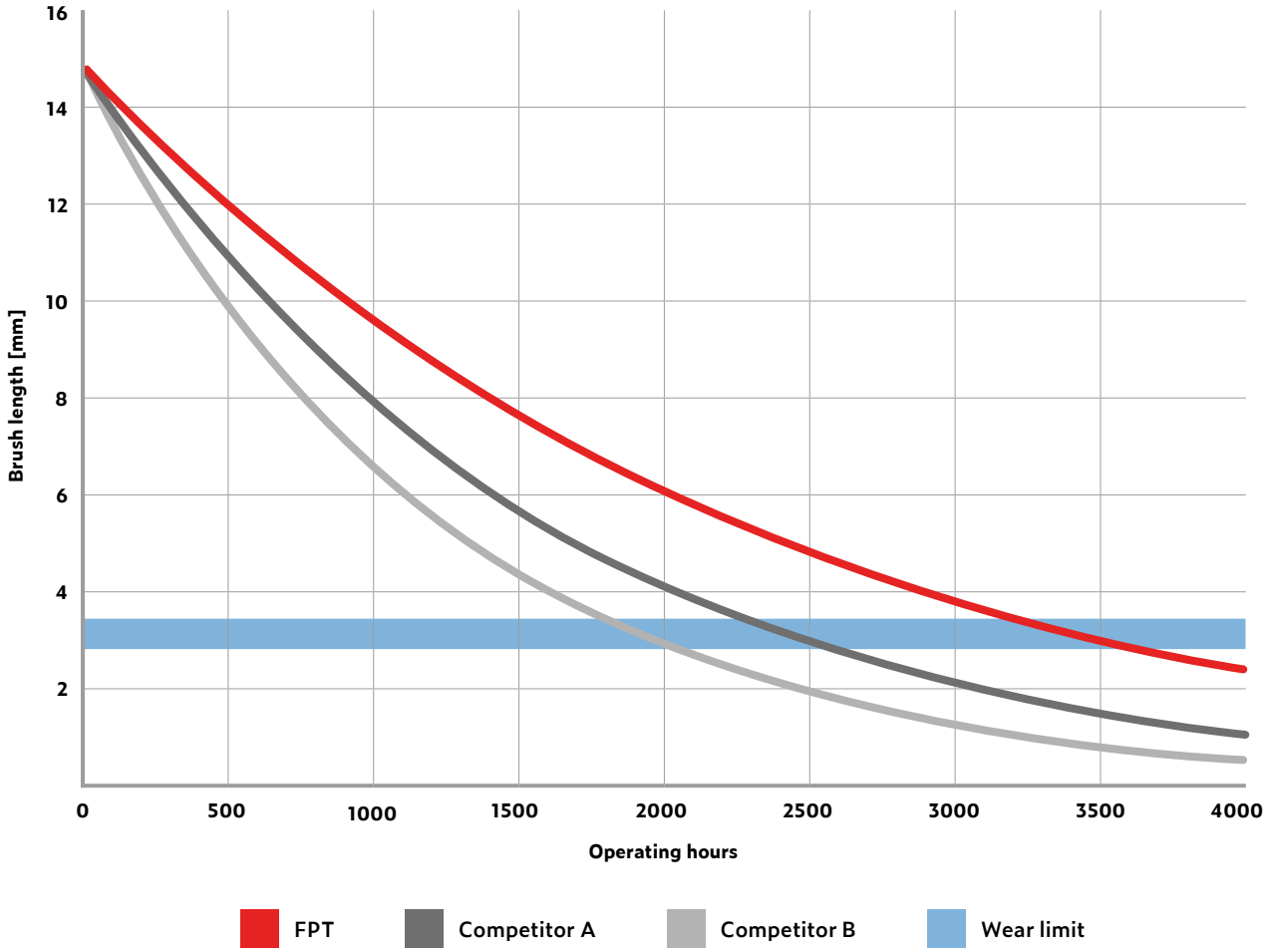
DURABILITY COMPARISON



*The Competitor B alternator, although it recorded a slight increase in performance (probably due to running in), still produced 20% less current compared to the original FPT alternator at the end of the test.

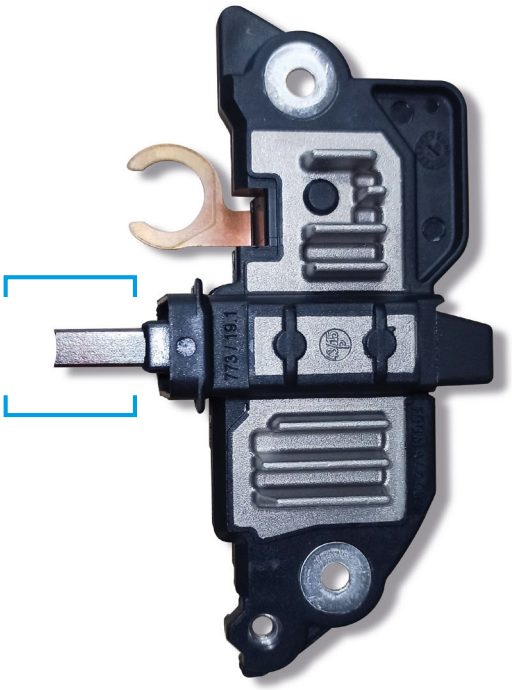
THE ORIGINAL FPT ALTERNATORS DEMONSTRATED HIGH RESISTANCE TO WEAR.

ANALYSIS OF REGULATOR BRUSHES WEAR



The wear on the regulator brushes was assessed by measuring the length of the brushes before and after the durability test.

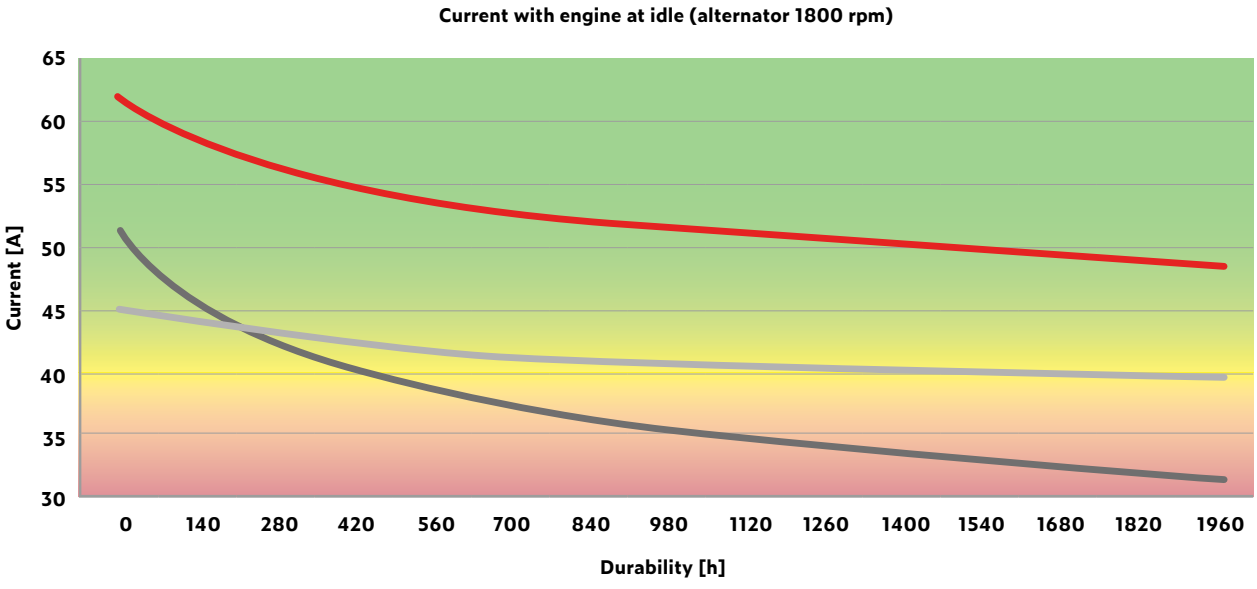
The results show that the original brushes of the regulator can last for over 3,500 operating hours, up to 70% more than the competition.
The results of the tests on the original FPT alternator showed better performance throughout its lifecycle, and that it was more resistant to wear.



Why choose an original FPT alternator

During the durability tests, the difference in performance between the original alternator and the competitors' alternators grew. With ageing, the performance of the competitors' alternators may no longer be sufficient to ensure battery charging, with the risk of not having enough power to start the engine or for the correct operation of the vital electrical components.

CONCLUSION



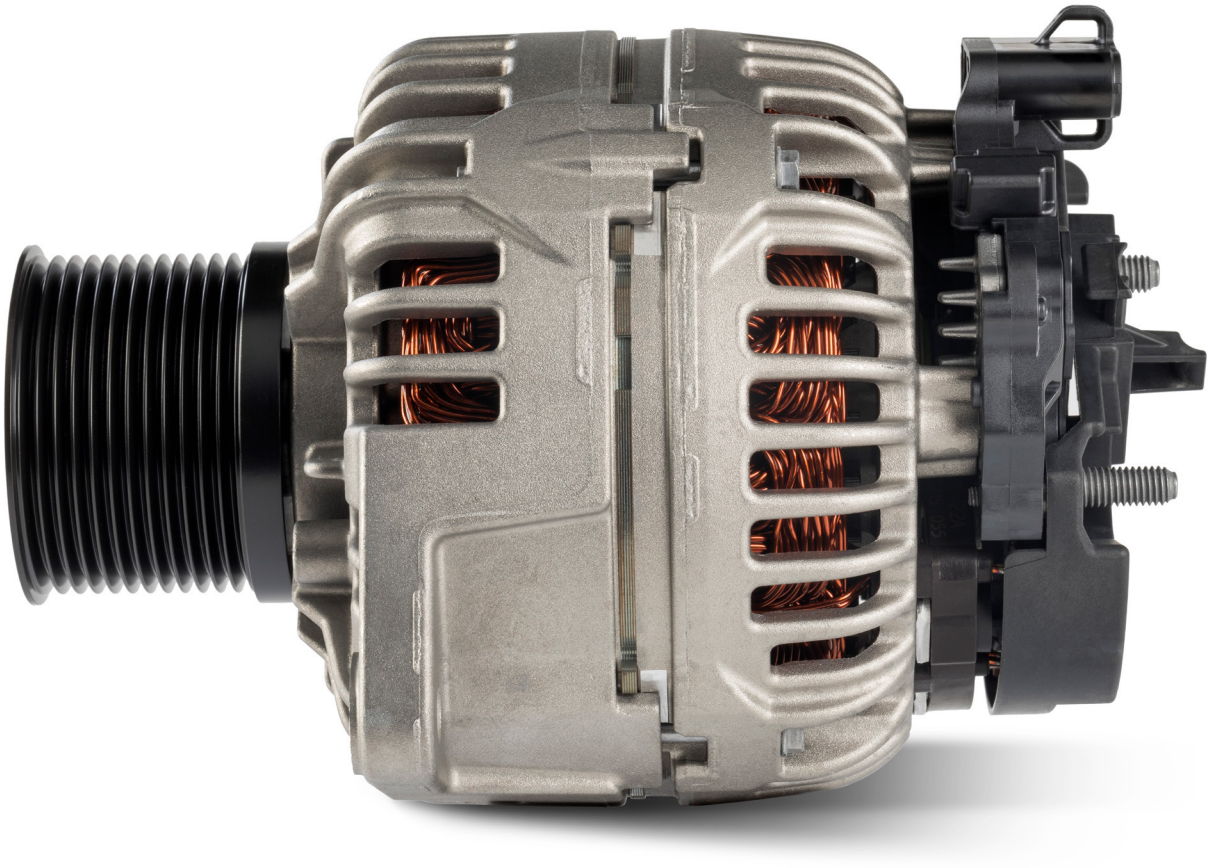
SAFETY ZONE	DANGER ZONE	CRITICAL ZONE
Battery charging	Battery charging at risk	Battery charging insufficient

Only an FPT Genuine alternator can provide you with high and constant performance under any conditions, providing the necessary charge and keeping your battery in good health even in the long term.

ALL THE CHARGE YOU NEED FOR YOUR EQUIPMENT.

With FPT Genuine, you can be sure of having all the power you need under the toughest driving conditions, even in the long term. Safe engine starting is guaranteed thanks to optimum and faster charging of the battery, and the electrical system is kept in good condition.

Only FPT alternators have a protective cover on the B2+ spare terminal to avoid the risk of any accidental contact with other components and prevent short circuits or even fire in the worst cases.



ONLY ORIGINAL FPT ALTERNATORS GUARANTEE STABLE CURRENT UNDER ALL OPERATING CONDITIONS.

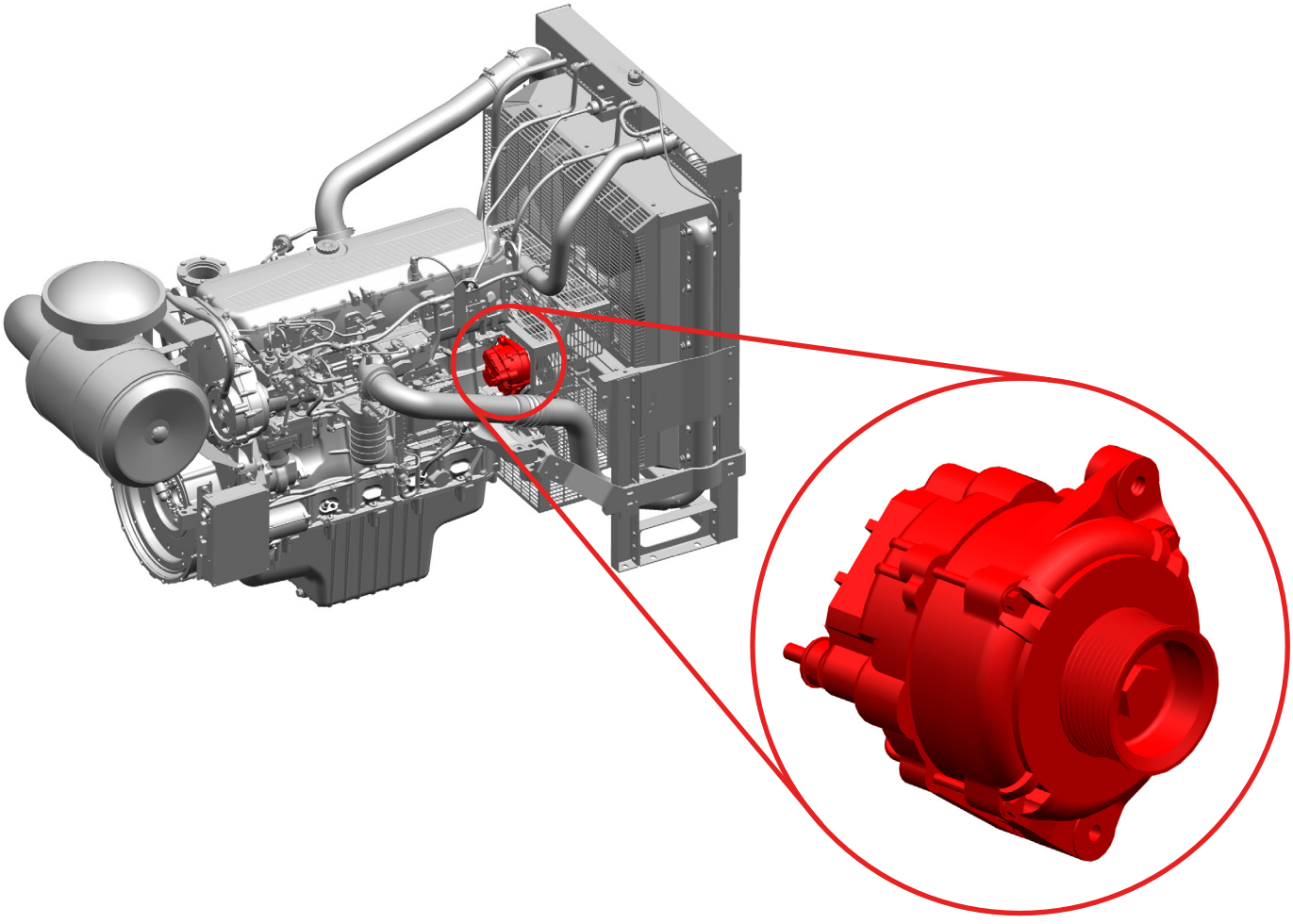
Getting the most from your alternator

Periodically check that the electrical contacts of the alternator are clean and firmly fastened. With the engine running, pay attention to any noises or vibration coming from the alternator – obviously first and foremost paying attention to traffic laws and personal safety requirements; in the event of any unusual noises or stresses, check that the serpentine belt is at the correct tension and replace if worn.

When changing the serpentine belt, check that the alternator pulley is firmly attached and does not present excessive play; replace the alternator with an original FPT spare part in the event of abnormal pulley movement.

Check that your original alternator is operating correctly using a tester, or ask your repair shop to do this, for instance during a routine service of your vehicle or equipment.

If the current generation is suboptimal, we recommend having the alternator replaced.



Contact us

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