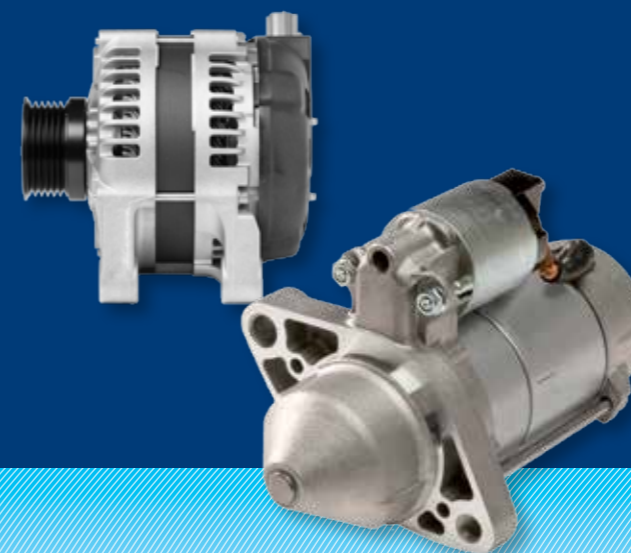




# DENSO Starters & Alternators

For a perfect start, every time...



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## DENSO Starters & Alternators

Outstanding performance through advanced design

- > World-leading design & innovation
- > Premium quality components
- > Unrivalled wear resistance and performance
- > No core surcharge or returns policy reduces administration
- > Rigorous testing ensures highest standards of fit and function
- > Extensive applications list

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Driven by  
Quality

## Rotating

The DENSO difference

True pioneers of advanced starter and alternator technology for modern cars, motorcycles and commercial vehicles, DENSO has become the world's largest OE rotating machine manufacturer.

Selected as original equipment by carmakers worldwide, the advanced design, OE quality and powerful performance of DENSO's rotating machine technology is now available to the aftermarket.

DENSO's programme of replacement Starters and Alternators offers OE specification and completely new parts, with no remanufactured units. Every machine is subjected to our rigorous manufacturing and testing processes, so you can be sure they meet the highest standards of fit and performance.

Which is why, when you need a replacement Starter or Alternator, there's only one name to choose: DENSO.



# Starters | Engineering expertise

A vehicle engine cannot start unaided; an external force is required to provide rotational speed at or above a set value. The starter drives a built-in motor using the vehicle battery as a power source to create power and start the engine. Since introducing its first, commercial automotive Starters in the early 1960s, DENSO has poured its world-leading engineering expertise into developing smaller, lighter units that can maintain the highest possible output.

## Reduction Starter

A high-speed motor with an improved deceleration ratio and a heat resistant electric wire reduces the size and weight of the motor. The cold-forged spline reduces the size and weight of the magnetic switch.

## Planetary Reduction Segment Conductor Motor (PS) Starter

A rectangular conductor and surface commutator in the armature, together with a magnet between the main electrodes of the yoke, reduces the size and weight of DENSO's PS Starters.

The damper unit combined with a high deceleration ratio further reduces starter size and reduces driving noise.



# Features and benefits

Your customers can benefit from the world class technology featured in every DENSO Starter and Alternator, bringing advanced OE specifications direct to the aftermarket.

- > **100% OE specification**  
A quality fit, appearance and service life
- > **All 'new in box'**  
There are no remanufactured units and no core surcharge or returns policy
- > **Maximum efficiency**  
The smallest and lightest in the world, while delivering the highest outputs
- > **Extensive applications list**  
Unrivalled Toyota coverage plus a wide range of European marques including Ford, Opel, BMW, Fiat and Land Rover



## Starter (special features and benefits)

- > Maximum cranking torque under all conditions
- > Designed to meet the extreme heat and electrical requirements of a modern engine
- > Improved anti-dust and waterproof capabilities
- > Small, light weight, easy mountability and low cranking noise

- > **Unique technologies**  
High output SC Alternators (up to 240A rated output) and a range of Starters developed for modern stop-start systems: Advanced Engagement (AE), Permanently Engaged (PE) and Tandem Solenoid (TS) Starters
- > **High standards**  
Rigorous manufacturing and testing ensures the range meets the highest standards of performance
- > **Leading the market**  
First choice of the aftermarket: for a trouble-free repair



## Alternators (special features and benefits)

- > Optimized stator and rotor sizes: improve magnetic circuit to increase output
- > Smaller pulley diameter: allows a faster rotor
- > Two blades integrated with the rotor: reduce fan noise, size and weight
- > Small and multifunctional IC regulator: full compatibility with sophisticated electronics systems

# Alternators | Pioneering design

The alternator (and regulator) is driven by the engine, via the belt. It converts mechanical energy into electrical energy, and supplies the required power to the various electrical loads.

DENSO has pioneered a variety of new Alternator designs capable of producing more electrical power more efficiently, yet in a smaller, lighter unit.

## Alternator with Small Internal Fan

An optimised stator and rotor size improve the magnetic circuit to increase output and a smaller pulley diameter allows a faster rotor.

The fan features two blades, integrated with the rotor, to significantly reduce the noise, size and weight of these DENSO Alternators.

## SC Alternator

DENSO introduced the world's first SC Alternator using a rectangular conductor for its stator coil. By raising the winding density the SC Alternator is 20 percent lighter yet achieves 50 percent higher output. It features a one chip IC regulator.

