



Ignition system

Function and structure of an ignition system

In a combustion engine, the ignition serves to ignite the compressed fuel-air mixture in the combustion chamber in the cylinder. In a petrol engine, ignition occurs due to high-voltage sparks at the spark plug, in a diesel engine through auto-ignition of the highly compressed and thereby heated air when fuel is injected. It is essential for optimum functioning of the petrol engine that the correct ignition timing is set for igniting the petrol-air mixture compressed by the piston. A voltage of between approximately 28,000 and 35,000 volts is required to create the ignition spark between the spark plug electrodes. As a normal car battery has a voltage of only 12 V, the high voltage required must be generated through a stepping-up process.

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Control unit, glow plug system

The function of the preheating relay is to control the glow plugs in a diesel engine. By means of a temperature sensor attached to the engine, the relay determines whether and for how long preheating is needed in order to start the engine. During the warm-up phase, it determines for how long and to what degree post-heating is required in order to ensure smooth running of the engine and the lowest level of pollutant emissions. This is good news for the glow plug, the engine and the environment.

Article number: 75614*, J572*



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Distributor rotor

The distributor rotor, also known as the ignition rotor, is fitted to the ignition distributor shaft and rotates inside the distributor cap. Via the spark plugs, the contact surface at the distributor rotor creates the contact points between the distributor cap and the ignition impulse of the respective cylinders. The ignition current produced is conducted to the spark plug through the connected ignition cables. This component too is characterised by extremely precise accuracy of fit during

the production process. In Herth+Buss ignition parts, this is guaranteed by the high material quality. All distributor rotors are fitted with clips.

Article number: J533*



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Condenser

The condenser in the ignition system serves to enable the reliable generation of secondary voltage by the ignition coil. It absorbs the induction voltage when the contacts open and reduces the residual magnetic field after the contacts close in order to provide a consistently strong ignition spark. This is also an important component that is only able to reliably support the ignition system when produced in high material quality.

Article number: J535*



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Contact set

The contact set is attached to the contact breaker base plate and routes the ignition voltage coming from the ignition coil over the distributor rotor to the spark plugs. In the case of this spare part too, Herth+Buss pays great attention to product quality as at higher engine speeds the contact opens and closes the circuit up to 12,000 times per minute.

Article number: J534*



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Pencil Coil

The pencil coil requires neither a distributor nor an ignition cable (electronic ignition). With this type of construction, the actual ignition coil forms a unit with the spark plug connector and is fitted directly to the spark plug.

Article number: 19050*, J537*

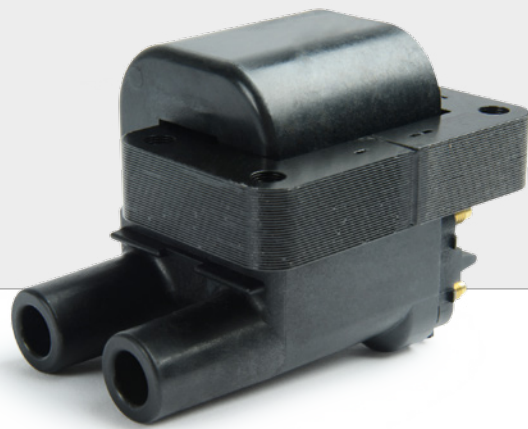


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Ignition Coil

Ignition coils are used with ignition systems with a distributor. With this design, the voltage is passed from the coil to the distributor and through the ignition cables to the spark plugs.

Article number: 19020*, 19050*, J536*



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Ignition modules

Ignition modules are needed to control the process of stepping up to the high voltage required for an ignition spark.

Function: The ignition coil has a primary winding (few turns) and a secondary winding (numerous turns). The ratio of turns between the two windings determines the strength of the high voltage produced at the output. When the primary winding of the ignition coil is connected to the 12-volt battery voltage of the passenger car via a switch, a current flows through the primary winding. A magnetic field forms in the ignition coil, which also acts on the secondary winding. If the switch is opened again, current can no longer flow over the primary winding. The energy is then stored in the form of a magnetic field inside the ignition coil. The ignition coil attempts to equalise and generates a voltage in the secondary winding which is high enough to cross through the air between the electrodes and the spark plug. The energy flows off over the spark plug, thereby creating the ignition spark.

Article number: 190*

