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**BMW 3-Series 320i & 320xi (12-14), 325i, 325xi, 330i & 330xi (06) & 328i & 328xi (07-14) Haynes Online Manual**

## 8 Ignition system - general information and precautions

The ignition system is controlled by the engine management system (see [Chapter 4](#)), known as DME (Digital Motor Electronics). The DME system controls all ignition and fuel

injection functions using a central PCM (Powertrain Control Module).

The ignition timing is based on inputs provided to the PCM by various sensors supplying information on engine load, engine speed, coolant temperature and inlet air temperature (see [Chapter 6](#)).

The engines are equipped with knock sensors to detect knocking (also known as pinging or pre-ignition). The knock sensors are sensitive to vibration and detect the knocking which occurs when a cylinder starts to pre-ignite. The knock sensor provides a signal to the PCM which in turn retards the ignition advance setting until the knocking ceases.

A distributorless ignition system is used, with a separate coil for each cylinder. The coils provide the high voltage signal directly to each spark plug.

The PCM uses the inputs from the various sensors to calculate the required ignition advance and the coil charging time.

Other than testing of the ignition coils (see [Section 2](#)), pinpoint diagnostics can only be performed with an advanced scan tool, at a dealership or other qualified shop.

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