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WHAT IS VARIABLE VALVE TIMING AND VANOS?

Most current German make automobile engines including BMW, Mercedes Benz, Audi, Porsche and Volkswagen all make use of variable valve timing. This allows a vehicle engine to be tuned and balanced between engine performance and engine economy (fuel mileage). Your BMW, Mercedes Benz, Audi, Porsche or Volkswagen has programming built into the engine control module (ECU/DME) that changes the engine valve timing (when the valves open and close) based on driving conditions. This optimization automatically and continuously adjusts the valve timing to suit operating conditions (rpm/load), and can either increase fuel efficiency or engine performance depending on how the vehicle ECU/DME is programmed.

The particular implementation varies with engine and manufacturer. Today’s advanced systems use continuously variable cam controls – typically an oil solenoid valve is controlled from the ECU/DME and the position of the cam is detected and adjusted using the cam position sensors and actuators. Earlier implementations of variable valve timing controlled just the intake camshaft(s) position, while current systems control both the intake and exhaust camshaft position, controlling when air enters the combustion chamber and when exhaust is let out independently.

One of the most complex systems currently supported is BMW’s VANOS (abbr. from German variable Nockenwellensteuerung) system for controlling both intake and exhaust camshaft timing. In 1999, BMW first introduced the single VANOS system controlling the intake valves. Current technology utilizes a double VANOS system controlling both the intake and exhaust valves.

Although all manufacturers utilize variable valve and camshaft timing

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technology to gain better and more efficient performance, it does come with a price. It is critical that you maintain the specified engine oil and change your oil regularly. Oil and dirt deposits will become lodged in the timing control actuators causing check engine lights and poor operating performance. On the BMW VANOS system, this is also commonly followed by a “rattle” noise at the front of the engine. When seeking Austin BMW repair (https://germanautocenter.com/service/austin-bmw-service/) or service, it’s important that the automotive experts you choose understand the VANOS system. By choosing German Auto Center, you can rest assured that our automotive team is knowledgeable in variable valve timing and VANOS.

Whether you drive a Porsche, Mercedes Benz, BMW, Volkswagen or Audi, remember that today’s German performance vehicles can only perform to their optimum specifications if they are properly maintained and serviced. Remember to service your engine and have the oil professional changed by the experts at German Auto Center every 7,500 miles (5,000 for turbo charged and super charged engines).

Seek regular Porsche, Mercedes Benz, BMW, Volkswagen and Audi service in Austin (https://germanautocenter.com/service/austin-audi-service/), which will ensure that your engine management system is operating properly. If you have any questions, simply come by and visit Austin German auto repair experts at German Auto Center and we will be happy to assist you.

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