

Name \_\_\_\_\_

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

1) What is the purpose and function of the cascade valve?

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2) Why does the Fiat Chrysler VM 3.0 use a bedplate?

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3) What is the purpose of the MAF sensor?

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4) What is the purpose of the swirl valves?

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5) What is the purpose of the airflow control valve?

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## Answer Key

Testname: LVDE1\_SHORT25

- 1) The function of the cascade valve is to ensure there is adequate fuel to lubricate the pump and to limit the fuel pressure supplied to the fuel quality solenoid. If the cascade valve requires replacement, it is serviced with a new pump.  
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- 2) A bedplate provides the lower crankshaft bearing journal and adds to the strength and stiffness of the engine.  
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- 3) The mass air flow sensor (MAF) is used by the PCM to measure air density. The primary use of this input is to make adjustments to the EGR operation. The sensor is located between the air filter and the inlet to the turbocharger.  
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- 4) The VM 3.0-liter V-6 engine uses a unique composite intake manifold that uses a swirl valve design. Each cylinder has two intake runners, one that is direct and one that is swirl port. The swirl port runner is controlled by an actuator and is used at low engine speeds to reduce particulate matter. The swirl valves are normally open, and at low engine speed they are closed. The change in air flow allows for more complete combustion, which results in better engine performance and reduced particulate matter.  
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- 5) The PCM controls the air control valve during EGR operation. The position of the valve determines the mix of fresh air and exhaust gasses in the intake manifold. The PCM uses the feedback from the O2 sensor to help determine the valve position. The default position of the valve is the open position.  
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