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> Dorman 917-010 Engine Variable Valve Timing (VVT) Solenoid Instruction Manual

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Instruction Manual

1. PRODUCT OVERVIEW

The Dorman 917-010 Engine Variable Valve Timing (VVT) Solenoid is a precision-engineered replacement part designed to match the fit and function of the original VVT solenoid in specific vehicle applications. Constructed from quality materials, this solenoid is built for a long service life and has undergone testing to ensure proper performance. It plays a crucial role in optimizing engine performance by controlling valve timing.



Figure 1: The Dorman 917-010 Engine Variable Valve Timing (VVT) Solenoid, shown with its included mounting bolt. This component is designed for precise control of engine valve timing.

Key Features

- **Ideal Replacement:** Professionally engineered to match the function and performance of the stock part.
- **Durable Construction:** Made from quality materials to ensure a long service life.
- **Vehicle Tested:** Has undergone on-vehicle testing to ensure proper fit and performance.

Compatible Vehicles

This VVT solenoid is compatible with various models, including but not limited to: Buick Rainier (2004-2007), Chevrolet Colorado (2004-2012), Chevrolet Trailblazer (2002-2009), GMC Canyon (2004-2012), GMC Envoy (2002-2009), Hummer H3 (2006-2010), Isuzu Ascender (2003-2008), and Saab 9-7x (2005-2009). Always verify fitment for your specific vehicle trim using the manufacturer's garage tool or compatibility charts before purchase.

2. INSTALLATION

Installation of the VVT solenoid requires mechanical aptitude and specific tools. It is recommended that installation be performed by a qualified technician. Always refer to your vehicle's specific service manual for detailed, step-by-step instructions, torque specifications, and safety precautions.

General Installation Notes

1. Ensure the engine is cool and disconnected from the battery before beginning any work.
2. Locate the existing VVT solenoid on your engine. Its position varies by vehicle model and engine configuration.
3. Carefully remove any obstructing components to gain access to the solenoid.
4. Disconnect the electrical connector from the old solenoid.
5. Remove the mounting bolt(s) securing the solenoid.
6. Gently pull the old solenoid out of its housing. Be prepared for a small amount of oil to drain.
7. Inspect the housing and surrounding area for any debris or damage. Clean as necessary.
8. Apply a thin coat of clean engine oil to the O-rings of the new Dorman VVT solenoid.
9. Carefully insert the new solenoid into the housing, ensuring it seats properly.
10. Reinstall the mounting bolt(s) and tighten to the vehicle manufacturer's specified torque.
11. Reconnect the electrical connector.
12. Reinstall any components that were removed to access the solenoid.
13. Reconnect the battery and check for proper operation.



Figure 2: Side view of the Dorman 917-010 VVT Solenoid, highlighting its cylindrical body and electrical connector. This perspective helps in identifying the component's orientation during installation.



Figure 3: Top view of the Dorman 917-010 VVT Solenoid, showing the mounting flange and the internal components visible through the openings. This view is useful for understanding the solenoid's design and how it interacts with the engine's oil passages.

3. OPERATION

The Variable Valve Timing (VVT) system in your engine adjusts the timing of the intake and exhaust valves to optimize engine performance across various operating conditions. This technology allows for more power, reduced emissions, and reduced noise, vibration, and harshness (NVH). The VVT solenoid controls the oil flow to the cam phasers, which in turn adjust the camshaft position relative to the crankshaft.



Video 1: "Why Choose Dorman VVT Solutions?" This video provides an in-depth explanation of Variable Valve Timing (VVT) technology, its benefits, and highlights Dorman's rigorous testing and quality control processes for their VVT components. It demonstrates how Dorman's VVT solutions are engineered to meet or exceed OEM standards, ensuring reliable engine performance.

4. MAINTENANCE

Proper maintenance is crucial for the longevity and optimal performance of your VVT system. The VVT solenoid relies on clean engine oil for its operation. Carbon buildup and poor maintenance habits, such as neglecting regular oil changes, can accelerate wear and cause loss of oil pressure, particularly within the phasers where clearances can gradually increase over time.

To ensure the continued reliability of your Dorman VVT Solenoid and the overall VVT system, adhere strictly to your vehicle manufacturer's recommended oil change intervals and use the specified oil type. Regular maintenance helps prevent premature wear and potential system malfunctions.

5. TROUBLESHOOTING

Issues with the VVT solenoid can manifest in several ways, often leading to noticeable changes in engine behavior. Common symptoms include erratic engine operation, illumination of the check engine light, and a rattling noise from the engine, particularly during startup or at idle. These symptoms indicate that the VVT system may not be functioning correctly, potentially due to a faulty solenoid or related components.

If you experience any of these symptoms, it is advisable to have your vehicle diagnosed by a qualified technician. Early diagnosis and replacement of a failing VVT solenoid can prevent further engine damage and costly repairs. Using high-quality replacement parts, such as the Dorman 917-010, is essential to ensure reliable performance and avoid issues that could lead to complete engine replacement.

SOLENOIDS

DIMENSIONAL VERIFICATION TESTING

Dorman solenoids are machined to exacting tolerances. Micrometer testing helps ensure that products meet our benchmarks.



Figure 4: A Dorman VVT solenoid undergoing dimensional verification testing. This process ensures that the solenoid is machined to exact tolerances, contributing to its precise fit and function within the engine.

SOLENOIDS

OIL FLOW TESTING

We measure pressure and flow rates to verify solenoids will perform properly across all operating pressures.

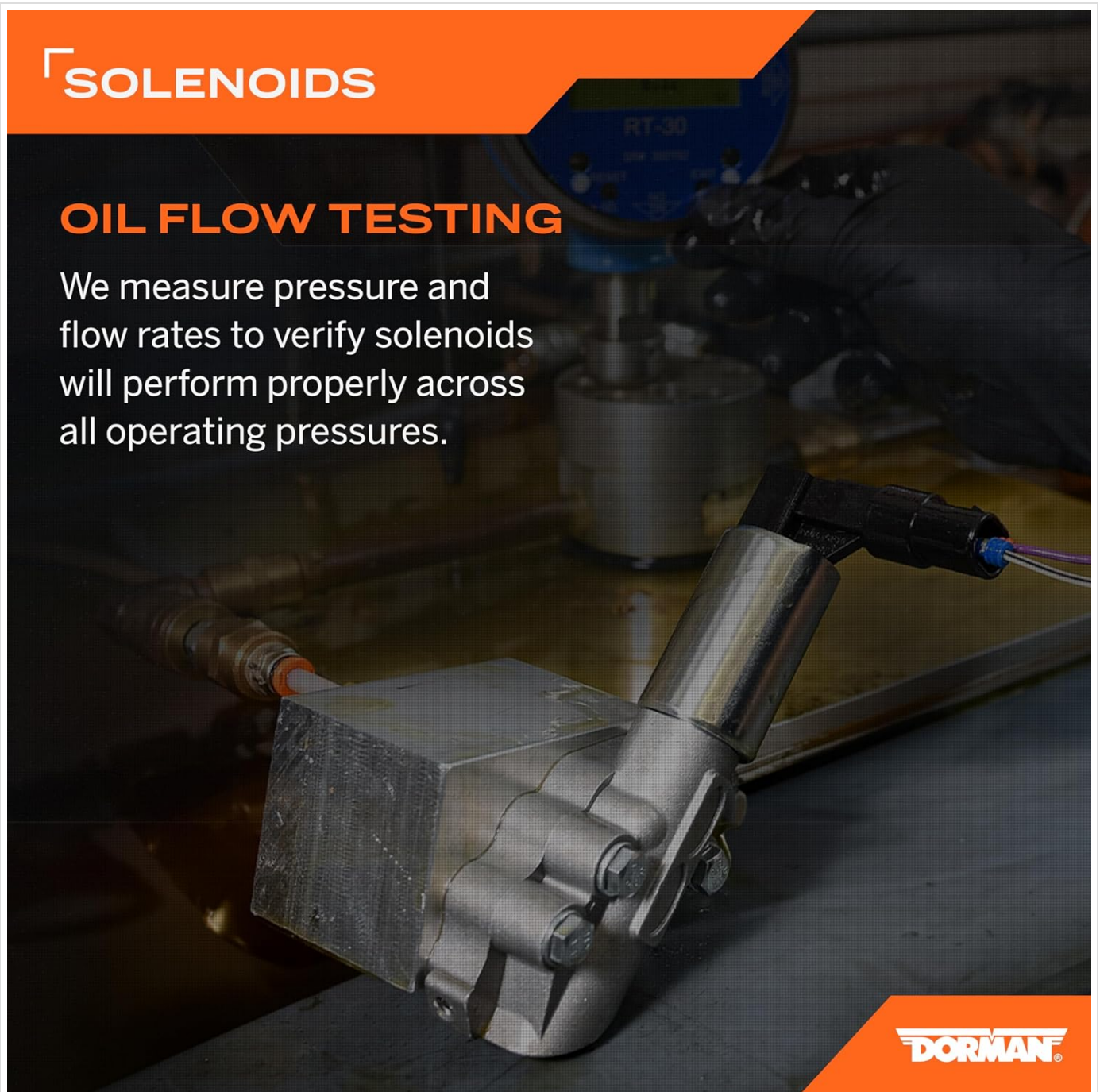


Figure 5: A Dorman VVT solenoid undergoing oil flow testing. This test measures pressure and flow rates to verify that the solenoid will perform properly across all operating pressures, ensuring consistent valve timing adjustment.

6. SPECIFICATIONS

Attribute	Value
Brand	Dorman
Model	917-010
Material	Aluminum
Item Dimensions (L x W x H)	6.4 x 2 x 2.6 inches
Item Weight	6.4 ounces
Number of Ports	2

Attribute	Value
Valve Type	Variable Valve
Specification Met	OE

7. WARRANTY AND SUPPORT

For detailed warranty information regarding your Dorman 917-010 VVT Solenoid, please refer to the official Dorman Products website or contact their customer service directly. The Dorman Technical Support Team is always available to assist with any questions or issues you may encounter during installation or operation.

Dorman Products is committed to providing quality automotive replacement parts and stands behind the performance of its products. For further assistance, visit www.dormanproducts.com or consult your product packaging for contact details.