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› Standard Motor Products VS124 EGR Valve Vacuum Solenoid User Manual

Standard Motor Products VS124

Standard Motor Products VS124 EGR Valve Vacuum Solenoid User Manual

Comprehensive guide for installation, operation, and maintenance.

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1. PRODUCT OVERVIEW

This manual provides essential information for the proper installation, operation, and maintenance of the Standard Motor Products VS124 EGR Valve Vacuum Solenoid. The EGR (Exhaust Gas Recirculation) vacuum solenoid is a critical component in your vehicle's emission control system, designed to regulate the flow of exhaust gases back into the engine's intake manifold. This process helps reduce nitrogen oxide (NOx) emissions, contributing to cleaner air and improved engine efficiency.



Figure 1: Front view of the Standard Motor Products VS124 EGR Valve Vacuum Solenoid, showing its compact design and vacuum ports.

2. INSTALLATION AND SETUP

Proper installation is crucial for the correct function of the EGR vacuum solenoid. It is recommended that installation be performed by a qualified technician. Always refer to your vehicle's specific service manual for detailed instructions and safety precautions.

2.1 Safety Precautions

- Ensure the vehicle's engine is off and cool before beginning any work.
- Disconnect the negative terminal of the vehicle's battery to prevent electrical hazards.
- Wear appropriate personal protective equipment, including gloves and eye protection.
- Be aware of hot engine components and sharp edges.

2.2 General Installation Steps

1. **Locate the Existing Solenoid:** Identify the location of the old EGR vacuum solenoid in your vehicle. This is typically near the EGR valve or intake manifold.
2. **Disconnect Electrical Connector:** Carefully disconnect the electrical connector from the old solenoid.
3. **Disconnect Vacuum Hoses:** Note the routing of the vacuum hoses and disconnect them from the old

solenoid. It may be helpful to label them or take a picture.

4. **Remove Old Solenoid:** Unbolt or unclip the old solenoid from its mounting bracket.
5. **Install New Solenoid:** Mount the new Standard Motor Products VS124 solenoid in the same position as the old one. Ensure it is securely fastened.
6. **Connect Vacuum Hoses:** Reconnect the vacuum hoses to the new solenoid, ensuring they are properly seated and routed according to your vehicle's specifications.
7. **Connect Electrical Connector:** Reattach the electrical connector to the new solenoid. Ensure a firm connection.
8. **Reconnect Battery:** Reconnect the negative terminal of the vehicle's battery.
9. **Test System:** Start the engine and check for proper operation. Clear any stored diagnostic trouble codes (DTCs) using an OBD-II scanner if necessary.



Figure 2: Close-up view of the electrical connector on the VS124 solenoid, highlighting the connection points for the vehicle's wiring harness.

3. OPERATION

The Standard Motor Products VS124 EGR Valve Vacuum Solenoid operates under the control of the vehicle's Engine Control Unit (ECU). Its primary function is to modulate vacuum pressure to the EGR valve, thereby controlling the amount of exhaust gas recirculated into the engine's combustion chambers.

- **Engine Warm-up:** During cold engine operation, the EGR system is typically inactive to allow the engine to reach optimal operating temperature quickly.
- **Cruising Conditions:** When the engine is at operating temperature and under light to moderate load (e.g., cruising on the highway), the ECU signals the solenoid to open, allowing vacuum to reach the EGR valve. This opens the EGR valve, introducing a controlled amount of exhaust gas into the intake manifold.
- **Heavy Load/Idle:** During heavy acceleration or at idle, the EGR system is usually deactivated to prevent engine performance issues or rough idling.

By precisely controlling the EGR flow, the solenoid helps to lower combustion temperatures, which in turn reduces the formation of harmful nitrogen oxides (NOx) and can improve fuel efficiency in certain driving conditions.

4. MAINTENANCE

The Standard Motor Products VS124 EGR Valve Vacuum Solenoid is designed for durability and typically requires minimal maintenance. However, periodic checks can help ensure its continued proper function and the overall health of your vehicle's emission system.

- **Visual Inspection:** Periodically inspect the solenoid and its associated vacuum hoses and electrical connector for any signs of damage, cracks, or loose connections.
- **Hose Integrity:** Ensure all vacuum hoses connected to the solenoid are pliable, free of kinks, and securely attached. Leaks in the vacuum system can impair solenoid function.
- **Electrical Connection:** Verify that the electrical connector is clean, corrosion-free, and securely seated.
- **Cleaning:** Avoid using harsh chemicals directly on the solenoid. If cleaning is necessary, use a soft, dry cloth to wipe away any dust or debris.

If any issues are observed, consult a qualified technician for diagnosis and repair.

5. TROUBLESHOOTING

If you experience issues that you suspect are related to the EGR vacuum solenoid, consider the following common symptoms and potential causes. Always consult a professional mechanic for accurate diagnosis and repair.

Symptom	Possible Cause	Action
Check Engine Light (CEL) with EGR-related codes (e.g., P0400, P0401, P0403)	Faulty EGR solenoid, clogged EGR passages, vacuum leak, wiring issue.	Inspect vacuum lines and electrical connections. Test solenoid operation with a diagnostic tool. Check EGR valve for carbon buildup.
Rough idle or stalling	EGR valve stuck open due to solenoid malfunction or carbon buildup.	Verify solenoid function. Inspect EGR valve for proper closing.

Symptom	Possible Cause	Action
Reduced engine performance or hesitation	EGR system not functioning correctly, potentially due to solenoid failure.	Perform diagnostic checks on the EGR system components.
Increased emissions	EGR system not recirculating exhaust gases effectively.	Check for proper EGR solenoid and valve operation.

Note: Many symptoms can be indicative of multiple issues. A professional diagnosis using specialized equipment is recommended for accurate identification and resolution of problems.

6. PRODUCT SPECIFICATIONS

Below are the key specifications for the Standard Motor Products VS124 EGR Valve Vacuum Solenoid:

- **Model Number:** VS124
- **Part Type:** EGR Valve Vacuum Solenoid
- **Brand:** Standard Motor Products
- **Item Weight:** Approximately 0.01 ounces (0.28 grams)
- **Product Dimensions (L x W x H):** 4 x 1.75 x 4.06 inches (10.16 x 4.45 x 10.31 cm)
- **Exterior Finish:** Machined
- **Inlet Connection Size:** 1.75 Inches
- **Inlet Connection Type:** Threaded
- **Outlet Connection Type:** NPT
- **Number of Ports:** 2
- **Outlet Connection Size:** 1.75 Inches
- **Country of Origin:** MEXICO
- **UPC:** 025623223292



Figure 3: Side view of the VS124 solenoid, showing the 'STANDARD' branding and overall construction.

7. WARRANTY AND SUPPORT

For information regarding the warranty coverage for your Standard Motor Products VS124 EGR Valve Vacuum Solenoid, please refer to the official Standard Motor Products website or contact their customer support directly. Warranty terms and conditions may vary.

Standard Motor Products Customer Support:

- **Website:** www.smpcorp.com
- **Contact Information:** Refer to the website for current contact methods (phone, email, etc.).

When contacting support, please have your product model number (VS124) and purchase details readily available.