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› [Standard Motor Products](#) /

› Standard Motor Products AC198 Idle Air Control Valve User Manual

Standard Motor Products AC198

Standard Motor Products AC198 Idle Air Control Valve User Manual

Model: AC198 | Brand: Standard Motor Products

INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, maintenance, and troubleshooting of the Standard Motor Products AC198 Idle Air Control (IAC) Valve. The AC198 is a precision-engineered component designed to regulate the amount of air bypassing the throttle plate, thereby controlling the engine's idle speed. Proper installation and care are crucial for optimal engine performance and longevity of the part.

Please read this manual thoroughly before attempting any installation or maintenance procedures. Keep this manual for future reference.

PRODUCT OVERVIEW

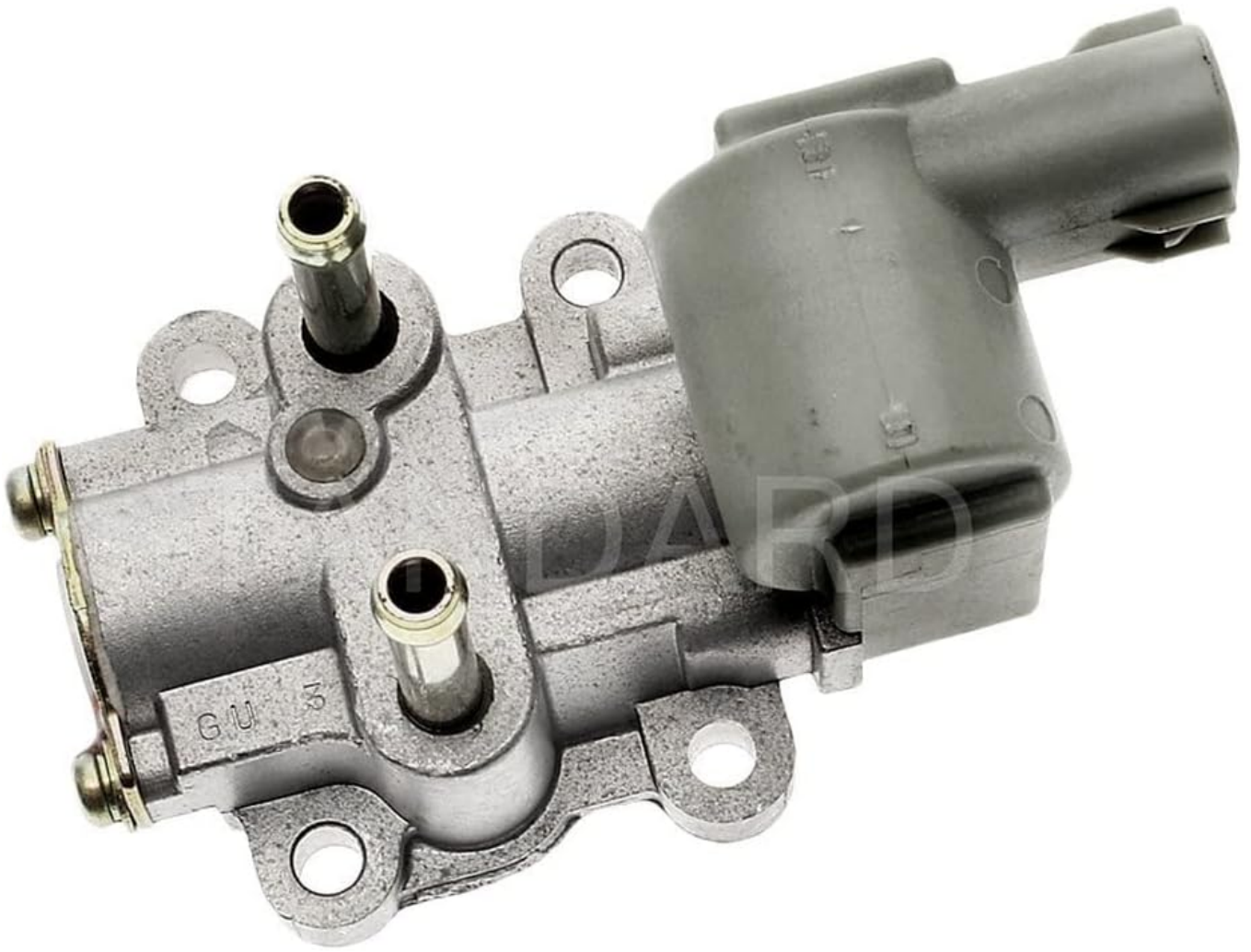


Figure 1: Front view of the AC198 Idle Air Control Valve, showing the main body and electrical connector.



Figure 2: View of the AC198 Idle Air Control Valve's mounting surface, highlighting the air passages and bolt holes.



Figure 3: Close-up of the electrical connector on the AC198 Idle Air Control Valve, showing the pin configuration.

What's in the Box:

- Standard Motor Products AC198 Idle Air Control Valve

SETUP AND INSTALLATION

Important Safety Information: Always disconnect the vehicle's battery before performing any electrical work. Allow the engine to cool down completely before handling engine components. Wear appropriate personal protective equipment (PPE) such as gloves and eye protection.

Tools Required:

- Socket wrench set
- Screwdriver set
- Torque wrench (refer to vehicle service manual for specifications)
- Gasket scraper (if old gasket needs removal)
- New gasket (if not included with the valve)
- Clean rags

Installation Steps:

1. **Locate the Existing IAC Valve:** Refer to your vehicle's service manual for the exact location of the Idle Air Control Valve, typically found on the throttle body.

2. **Disconnect Battery:** Disconnect the negative terminal of the vehicle's battery to prevent accidental electrical shorts.
3. **Disconnect Electrical Connector:** Carefully disconnect the electrical connector from the old IAC valve.
4. **Remove Mounting Bolts:** Using the appropriate socket or wrench, remove the bolts securing the old IAC valve to the throttle body.
5. **Remove Old IAC Valve and Gasket:** Carefully remove the old IAC valve. Inspect the mounting surface for any remaining gasket material or debris. Clean the mounting surface thoroughly with a gasket scraper and clean rag to ensure a proper seal for the new valve.
6. **Install New Gasket:** Place the new gasket onto the mounting surface or onto the new AC198 valve, ensuring proper alignment with the bolt holes and air passages.
7. **Position New AC198 Valve:** Carefully position the new Standard Motor Products AC198 Idle Air Control Valve onto the throttle body, aligning it with the bolt holes.
8. **Secure Mounting Bolts:** Install the mounting bolts and tighten them hand-tight. Refer to your vehicle's service manual for the correct torque specifications and tightening sequence. Use a torque wrench to tighten the bolts to the specified values. *Over-tightening can damage the valve or throttle body.*
9. **Reconnect Electrical Connector:** Firmly connect the electrical connector to the new AC198 valve until it clicks into place.
10. **Reconnect Battery:** Reconnect the negative terminal of the vehicle's battery.
11. **Perform Idle Relearn Procedure (if necessary):** Some vehicles require an idle relearn procedure after replacing the IAC valve. Consult your vehicle's service manual for specific instructions. This typically involves starting the engine and allowing it to idle for a set period, or performing a specific drive cycle.

OPERATING PRINCIPLES

The Standard Motor Products AC198 Idle Air Control Valve is an electromechanical device controlled by the vehicle's Engine Control Unit (ECU). Its primary function is to regulate the engine's idle speed by controlling the amount of air that bypasses the throttle plate when the throttle is closed. When the engine is idling, the ECU adjusts the IAC valve's position to maintain a stable and correct idle RPM, compensating for varying loads such as air conditioning, power steering, or electrical demands.

The valve typically consists of a stepper motor or a solenoid that moves a pintle to open or close an air passage. As the pintle moves, it changes the effective area of the bypass passage, allowing more or less air into the intake manifold, thus increasing or decreasing the idle speed. A properly functioning IAC valve ensures smooth idle, prevents stalling, and contributes to fuel efficiency.

MAINTENANCE

The Standard Motor Products AC198 Idle Air Control Valve is designed for long-term reliability and typically requires minimal maintenance. However, carbon buildup can affect its performance over time. Regular inspection and cleaning of the throttle body and IAC valve passages can help prevent issues.

Recommended Maintenance:

- **Throttle Body Cleaning:** Periodically clean the throttle body and the IAC valve's air passages using a throttle body cleaner. Follow the cleaner manufacturer's instructions. This can be done without removing the IAC valve in some cases, but for thorough cleaning, removal may be necessary.
- **Inspection:** During routine vehicle maintenance, visually inspect the IAC valve and its electrical connector for any signs of damage, corrosion, or loose connections.
- **Avoid Lubricants:** Do not lubricate the IAC valve's internal components with oil or grease, as this can attract dirt and lead to malfunction.

TROUBLESHOOTING

If you experience issues related to engine idle after installing or during the use of the AC198 IAC valve, consult the following table. Note that these are general guidelines; always refer to your vehicle's specific service manual for detailed diagnostic procedures.

Symptom	Possible Cause	Solution
High or Erratic Idle	• Vacuum leak • Stuck open IAC valve • Incorrect idle relearn procedure • Dirty throttle body/IAC passages	• Check for vacuum leaks (hoses, gaskets). • Inspect IAC valve for proper movement; replace if stuck. • Perform idle relearn procedure as per vehicle manual. • Clean throttle body and IAC passages.
Low Idle or Stalling	• Stuck closed IAC valve • Dirty throttle body/IAC passages • Electrical connection issue • Faulty IAC valve	• Inspect IAC valve for proper movement; clean or replace if stuck. • Clean throttle body and IAC passages. • Check electrical connector for secure fit and corrosion. • Test IAC valve resistance/operation; replace if faulty.
Check Engine Light (CEL) with IAC-related codes	• Faulty IAC valve • Wiring harness issue • ECU malfunction	• Scan for diagnostic trouble codes (DTCs). • Inspect wiring and connectors for damage. • Consult a qualified mechanic for further diagnosis.

If troubleshooting steps do not resolve the issue, it is recommended to consult a certified automotive technician.

SPECIFICATIONS

Attribute	Detail
Model Number	AC198
Brand	Standard Motor Products
Product Type	Idle Air Control Valve
Material	Metal
Exterior Finish	Machined
Dimensions (L x W x H)	3.87 x 3.37 x 1.1 inches
Item Weight	1 pound
UPC	091769330873
First Available Date	January 1, 2006

WARRANTY AND SUPPORT

Standard Motor Products stands behind the quality of its products. For specific warranty information regarding your AC198 Idle Air Control Valve, please refer to the warranty documentation included with your purchase or visit the official Standard Motor Products website. Warranty terms may vary based on region and retailer.

Customer Support:

For technical assistance, product inquiries, or warranty claims, please contact Standard Motor Products customer support through their official channels. You can typically find contact information on their website or on the product packaging.

Website: www.smpcorp.com

When contacting support, please have your product model number (AC198) and purchase details readily available.

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This manual is for informational purposes only. Always consult a qualified professional for vehicle repairs.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question