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› Standard Motor Products TX102 Coolant Sensor User Manual

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Model: TX102

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of the Standard Motor Products TX102 Coolant Sensor. Please read this manual thoroughly before proceeding with installation or use to ensure optimal performance and safety.

2. PRODUCT OVERVIEW

The Standard Motor Products TX102 is a high-quality coolant temperature sensor designed for automotive replacement applications. It plays a critical role in monitoring engine coolant temperature, providing vital data to the vehicle's engine control unit (ECU) for fuel management, ignition timing, and cooling fan operation. This sensor features a robust design with tight tolerance thermistor response values for accurate temperature measurement.

Key Features:

- Designed for vehicle-specific fitment.
- Ensures accurate temperature measurement.
- 100% factory tested for reliable performance.
- Manufactured with complete quality control from componentry to finished product.



Figure 2.1: Standard Motor Products TX102 Coolant Sensor. This image displays the Standard Motor Products TX102 Coolant Sensor, featuring its threaded metal body, electrical connector, and wiring harness.

3. SETUP AND INSTALLATION

Installation of the TX102 Coolant Sensor typically involves replacing an existing sensor. Due to the critical nature of this component and its integration with vehicle systems, professional installation by a qualified technician is recommended. Incorrect installation can lead to engine performance issues or damage.

Items Included:

- 1x Standard Motor Products TX102 Coolant Sensor

General Installation Steps (Consult Vehicle Service Manual for Specifics):

1. Ensure the engine is cool and the vehicle's electrical system is disconnected (e.g., battery negative terminal).
2. Locate the existing coolant temperature sensor. Its position varies by vehicle model.
3. Carefully drain a portion of the engine coolant to below the sensor's mounting level to prevent spillage.
4. Disconnect the electrical connector from the old sensor.
5. Using an appropriate wrench, remove the old sensor. Be prepared for some coolant leakage.
6. Install the new TX102 sensor, ensuring the threads are clean and a new thread sealant or O-ring (if applicable) is used to prevent leaks. Tighten to the manufacturer's specified torque.
7. Reconnect the electrical connector to the new sensor.
8. Refill the cooling system with the correct type and amount of coolant, then bleed any air from the system as per vehicle manufacturer guidelines.
9. Reconnect the battery and start the engine, checking for leaks and proper operation.

Warning: Working with automotive cooling systems involves hot fluids and pressurized components. Always exercise caution and wear appropriate personal protective equipment. Refer to your vehicle's specific service manual for detailed instructions and safety precautions.

4. OPERATING PRINCIPLES

The Standard Motor Products TX102 Coolant Sensor operates as a thermistor, a type of resistor whose resistance changes significantly with temperature. As the engine coolant temperature changes, the sensor's resistance changes accordingly. The vehicle's ECU monitors this resistance change and converts it into a temperature reading. This information is crucial for:

- Fuel Mixture Adjustment:** The ECU adjusts the air-fuel ratio based on engine temperature for optimal combustion and emissions.
- Ignition Timing:** Temperature data influences ignition timing for efficient engine operation.
- Cooling Fan Activation:** The sensor signals the ECU to activate the cooling fan when the engine reaches a predetermined temperature.
- Dashboard Gauge:** In some vehicles, the sensor also provides data for the dashboard temperature gauge.

Accurate operation of the coolant sensor is vital for engine efficiency, performance, and longevity.

5. MAINTENANCE

The Standard Motor Products TX102 Coolant Sensor is designed for long-term reliability and typically requires minimal maintenance. However, periodic checks can help ensure its continued proper function:

- Visual Inspection:** Periodically inspect the sensor and its wiring harness for any signs of physical damage, corrosion, or loose connections.
- Coolant Quality:** Ensure the vehicle's cooling system uses the correct type and concentration of coolant. Contaminated or incorrect coolant can lead to sensor degradation.
- System Leaks:** Address any coolant leaks promptly, as low coolant levels can expose the sensor to air, leading to inaccurate readings or damage.

If the sensor is suspected of malfunction, it should be tested or replaced by a qualified technician.

6. TROUBLESHOOTING

If you suspect an issue with your coolant temperature sensor, consider the following common symptoms and potential causes:

Symptom	Possible Cause	Action
Engine Overheating (Gauge reads high)	Faulty sensor, low coolant, cooling system issue	Check coolant level, inspect cooling system, test sensor.
Engine Running Cold (Gauge reads low)	Faulty sensor, stuck open thermostat	Test sensor, inspect thermostat.
Poor Fuel Economy	Inaccurate sensor reading causing rich fuel mixture	Test sensor, check for diagnostic trouble codes (DTCs).
Check Engine Light (CEL) On	Sensor circuit malfunction, out-of-range reading	Retrieve DTCs with an OBD-II scanner, diagnose based on codes.

For accurate diagnosis and repair, it is recommended to consult a professional automotive technician or refer to

your vehicle's service manual.

7. SPECIFICATIONS

Attribute	Detail
Brand	Standard Motor Products
Model Number	TX102
Measuring Range	32 - 220 °F (0 - 104 °C)
Upper Temperature Rating	220 °F (104 °C)
Output Type	Electrical Signal
Mounting Type	Vehicle Specific
Item Dimensions (L x W x H)	4.6 x 2.3 x 2.3 inches
Item Weight	3.2 ounces (0.2 Pounds)
UPC	091769487836

8. WARRANTY AND SUPPORT

Standard Motor Products stands behind the quality of its products. For specific warranty information, please refer to the warranty documentation included with your purchase or visit the official Standard Motor Products website. For technical support or further assistance, please contact Standard Motor Products customer service.

Manufacturer: Standard Ignition

Website: www.smpcorp.com (This is a general link, specific product support may vary)