

[Manuals.plus](#) /

- › [Standard Motor Products](#) /
- › Standard Motor Products FJ489 Fuel Injector Instruction Manual

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Model: FJ489

1. PRODUCT OVERVIEW

The Standard Motor Products FJ489 is a high-quality remanufactured diesel fuel injector designed for specific automotive applications. This component is crucial for delivering fuel to the engine's combustion chamber with precise timing and atomization, ensuring optimal engine performance and fuel efficiency. This manual provides essential information regarding its installation, function, and maintenance.



Figure 1.1: Overall view of the Standard Motor Products FJ489 Fuel Injector.

1.1 What's in the Box

- One (1) Standard Motor Products FJ489 Fuel Injector

1.2 Key Features

- Precision-engineered for optimal fuel delivery.
- Constructed from durable metal for longevity.
- Features a machined exterior finish.
- Designed with flange type inlet and outlet connections.

2. INSTALLATION AND SETUP

Proper installation of the fuel injector is critical for vehicle safety and performance. Due to the complexity of fuel injection systems and the need for specialized tools and knowledge, it is highly recommended that installation be performed by a qualified automotive technician.

2.1 Safety Precautions

- Always disconnect the vehicle's battery before beginning any work on the fuel system.
- Ensure the engine is cool to prevent burns.
- Wear appropriate personal protective equipment, including safety glasses and gloves.
- Relieve fuel system pressure before disconnecting any fuel lines.
- Handle fuel with extreme care in a well-ventilated area, away from open flames or sparks.

2.2 General Installation Steps (Consult Vehicle Service Manual)

1. **Preparation:** Park the vehicle on a level surface, engage the parking brake, and disconnect the battery.
2. **Access:** Locate and gain access to the fuel injectors. This may involve removing engine covers, intake manifolds, or other components.
3. **Fuel System Depressurization:** Follow the vehicle manufacturer's procedure to safely depressurize the fuel system.
4. **Removal of Old Injector:** Disconnect the electrical connector and fuel lines from the old injector. Carefully remove the old injector, noting the position of any seals or O-rings.
5. **Inspection:** Inspect the injector bore and fuel rail for any debris or damage. Clean as necessary.
6. **New Injector Installation:** Install new O-rings and seals on the FJ489 injector. Lubricate O-rings with clean engine oil or a suitable lubricant. Carefully insert the new injector into its bore, ensuring it seats correctly.
7. **Connections:** Reconnect the fuel lines and electrical connector. Ensure all connections are secure and properly torqued according to vehicle specifications.
8. **Reassembly:** Reinstall any components removed to access the injectors.
9. **System Check:** Reconnect the battery. Turn the ignition to the "ON" position (without starting the engine) several times to prime the fuel system and check for leaks. Start the engine and check for proper operation and any fault codes.



Figure 2.1: Close-up of the injector tip, where fuel is atomized.



Figure 2.2: Threaded end of the injector for secure mounting.



Figure 2.3: Electrical connector for signal input to the injector.

3. OPERATING PRINCIPLES

The Standard Motor Products FJ489 Fuel Injector functions as a critical component within the diesel engine's fuel delivery system. It receives an electrical signal from the engine control unit (ECU), which activates an internal solenoid. This activation opens a valve, allowing highly pressurized diesel fuel to be sprayed into the engine's combustion chamber or pre-chamber at a precise moment and in a finely atomized mist. This precise fuel delivery is essential for efficient combustion, optimal power output, and reduced emissions.

Standard® Advanced Technology Solutions

Standard® designs and manufactures a broad variety of injector styles with matching flow rates, spray patterns, and body styles, including the disc, pintle and G injector configurations.



Figure 3.1: Diagram illustrating the internal components and operation of a fuel injector, showing disc and pintle configurations.

4. MAINTENANCE

Fuel injectors are generally designed to be maintenance-free components. However, their longevity and performance are directly influenced by the overall health of the vehicle's fuel system and the quality of fuel used.

4.1 Fuel Quality

- Always use high-quality diesel fuel from reputable sources.
- Avoid contaminated fuel, which can lead to clogging or damage to the injector's internal components.

4.2 Fuel Filter Replacement

- Regularly replace the vehicle's fuel filter according to the manufacturer's recommended service intervals. A clogged fuel filter can restrict fuel flow and put undue stress on the fuel pump and injectors.

4.3 System Checks

- Periodically inspect fuel lines and connections for leaks or damage.

- If any issues are suspected, consult a qualified technician for diagnosis and service.

5. TROUBLESHOOTING

If you suspect an issue with your fuel injector, observe the symptoms and consider professional diagnosis. Common symptoms of a faulty fuel injector include:

- **Engine Misfires or Rough Idling:** An injector that is clogged or not firing correctly can cause one or more cylinders to misfire.
- **Reduced Fuel Economy:** A leaking or improperly spraying injector can lead to excessive fuel consumption.
- **Check Engine Light:** The vehicle's ECU may detect an injector malfunction and illuminate the check engine light, often with a specific diagnostic trouble code (DTC).
- **Engine Performance Issues:** This can include loss of power, poor acceleration, or hesitation.
- **Fuel Odor:** A leaking injector can cause a strong fuel smell, especially around the engine bay.

5.1 Diagnostic Steps

1. **Scan for Codes:** Use an OBD-II scanner to check for any stored diagnostic trouble codes.
2. **Visual Inspection:** Look for obvious signs of damage, loose connections, or fuel leaks around the injector.
3. **Professional Diagnosis:** Due to the complexity and precision required, it is strongly recommended to have a qualified technician perform advanced diagnostics, such as fuel pressure tests, injector balance tests, or oscilloscope readings, to accurately identify the root cause of the problem.

Do not attempt to repair or modify the fuel injector yourself, as this can lead to further damage or safety hazards.

6. SPECIFICATIONS

Attribute	Detail
Brand	Standard Motor Products
Model Number	FJ489
Product Type	Fuel Injector - Diesel - Remanufactured
Material	Metal
Exterior Finish	Machined
Inlet Connection Type	Flange
Outlet Connection Type	Flange
Number of Ports	1
Item Dimensions (L x W x H)	4 x 8.5 x 2.25 inches
Item Weight	1 pound
UPC	091769702526

Attribute	Detail
Country of Origin	United States

7. WARRANTY AND SUPPORT

7.1 Product Warranty

For detailed information regarding the warranty coverage for your Standard Motor Products FJ489 Fuel Injector, please refer to the official warranty documentation provided by Standard Motor Products or contact their customer service directly. Warranty terms and conditions may vary.

7.2 Customer Support

If you have questions about the Standard Motor Products FJ489 Fuel Injector, require technical assistance, or need to report an issue, please contact Standard Motor Products customer support through their official website or the contact information provided with your purchase. Always provide your product model number (FJ489) when seeking support.