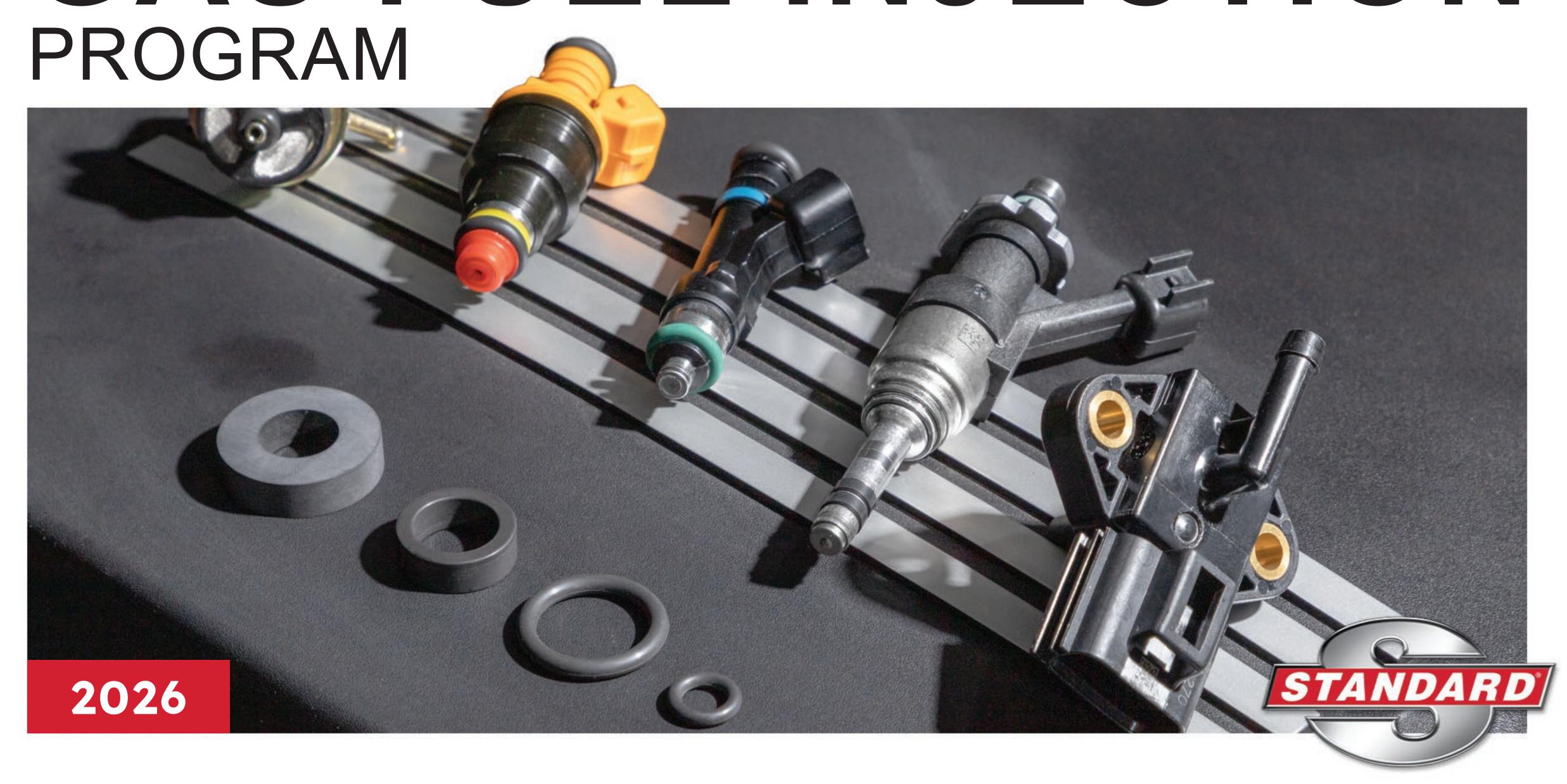
### GAS FUEL INJECTION

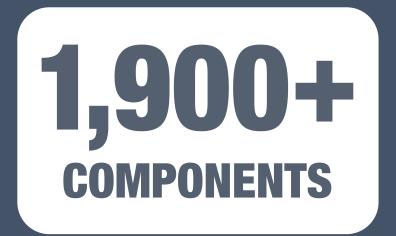


# WHAT'S IN YOUR BOX? HERE'S WHAT'S IN OURS.

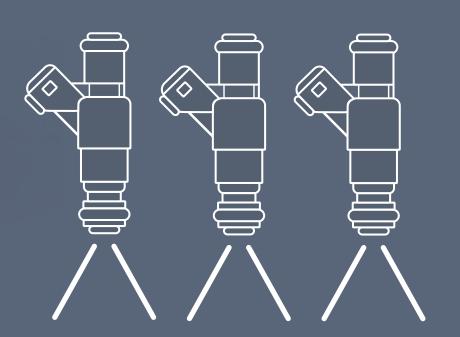




Standard® Gas Fuel Injectors are always new, with no remanufactured components for a longer service life



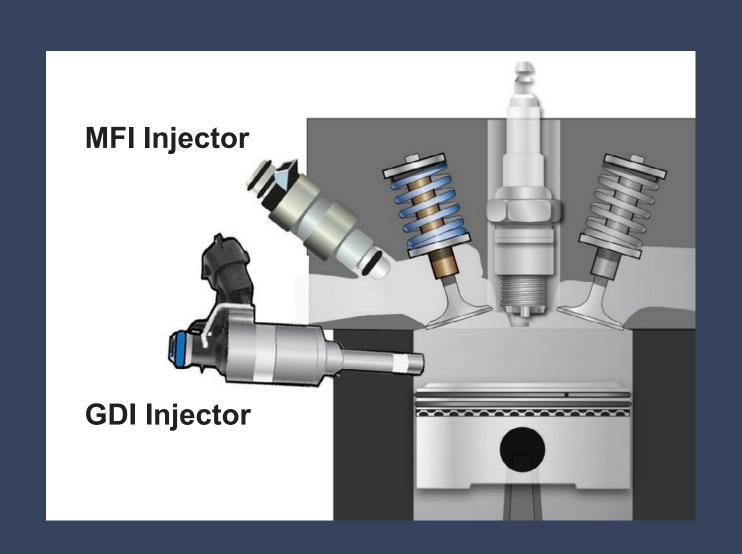
The Standard® Gasoline Fuel Injection Program features over 1,900 components



Standard® Fuel Injectors are precisionengineered and extensively tested to optimize engine performance

### Growing Market

To improve fuel economy and performance, many newer vehicles utilize both multi-port and direct injection systems. This helps to optimize engine performance in all driving conditions. The MFI injectors also help to keep the intake valves clean and free from carbon build-up.



### **Engines with Both GDI and MFI Systems**



Ford 5.0L (2023-18)



MFI FJ1514



GDI FJ1394



Audi 3.0L (2019-16)



MFI FJ1604



GDI FJ1393



Hyundai / Genesis 2.5L (2023-20)



MFI FJ1608

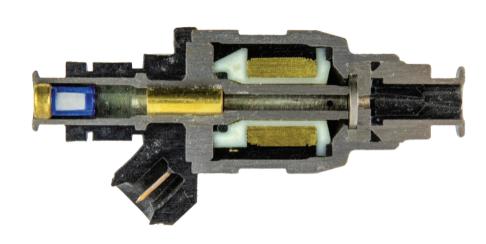


### Why Fuel Injectors Fail

Fuel injectors utilize an electric pulse to move an actuator which opens a small valve at the end of the injector. Opening at precisely the right moment, the injector sprays a specific amount of fuel in a specified pattern to optimize combustion.

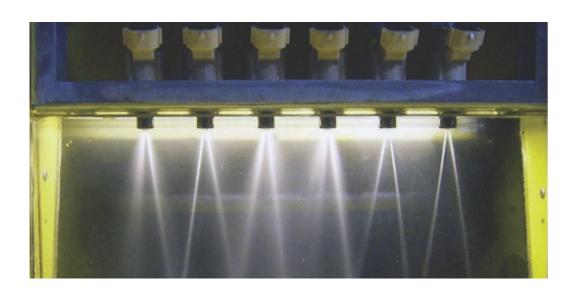
Fuel injectors operate in a harsh environment and are subjected to heat and vibration, which can cause them to fail prematurely.

### 4 Common Reasons Fuel Injectors Fail



### **Electrical Problems**

Repeated heat cycles and vibration cause the internal electrical components to fail



### **Contaminated Fuel**

Dirt, debris or low-quality fuel can clog or partially clog the injector, affecting performance



### **Leaking Injectors**

Failed seals can cause too much fuel to enter the cylinder, damaging engine and emission components

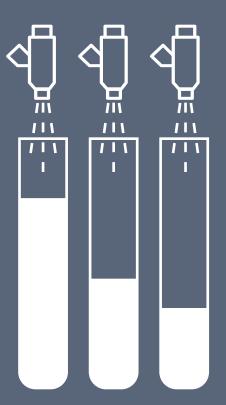


**Carbon Build-Up** 

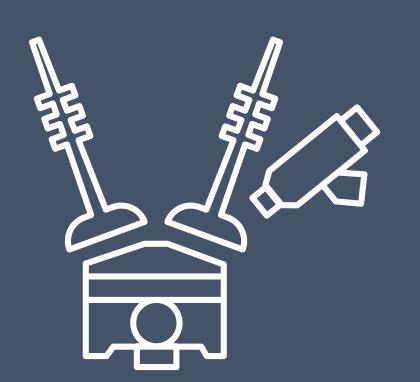
Carbon deposits form on the injector tip affecting injector performance and atomization (most common in GDI engines)



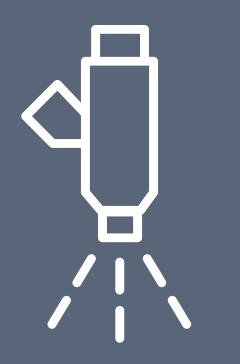
# Impact on Engine Systems



If one injector is delivering an incorrect amount of fuel, it will affect the fuel trim for the entire bank. This can cause multiple cylinders to receive too much fuel, resulting in increased fuel consumption and damage to the catalytic converter



Multi-port style injectors spray fuel over the valves, cleaning them as fuel enters the cylinder. GDI injectors deliver fuel directly into the cylinder, which allows carbon deposits to build up on the valve, disrupting airflow and eventually reducing overall engine efficiency



Balanced fuel delivery is crucial to proper engine operations and clean tailpipe emissions. If one injector is being replaced on a higher mileage engine, consider replacing the entire set for optimal performance



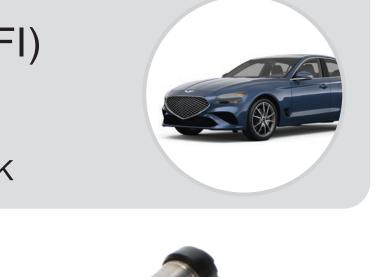
### What's New

### **GDI** and **MFI** Injectors

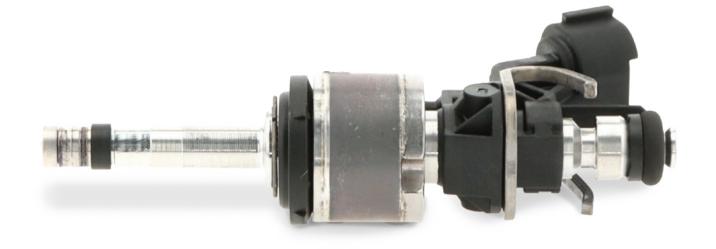
Standard® is at the leading edge of introducing both GDI and MFI Injectors for late-model vehicles. New applications are introduced at the front end of the demand curve, giving technicians precision-engineered alternatives to OE service parts.

For the most recent applications, check the catalog at **StandardBrand.com**.









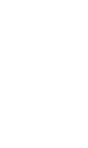
**FJ1595** (GDI)

Nissan Rogue

(2023-22) VIO: 442K







(2021-14) VIO: 412K

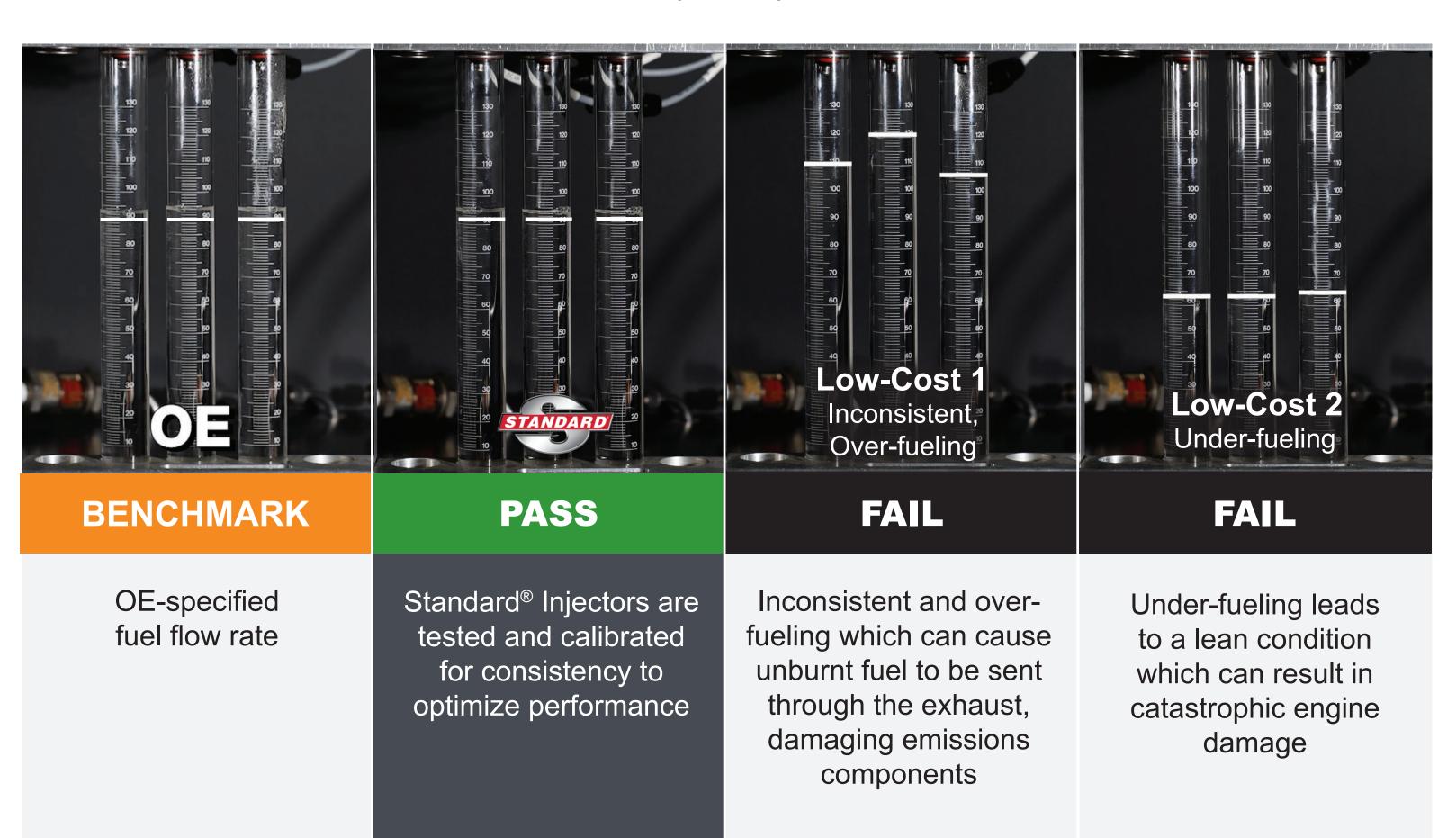


### Fuel Injectors: Tested

Modern engines depend on consistent fuel delivery across all cylinders for performance and reliabilty. This is why each Standard® Injector is individually calibrated and end-of-line tested to match OE. Low-cost injectors can vary in quality and on-vehicle performance, and can even damage internal engine and emissions components.

### **Fuel Flow Rate Test**

Measures the amount of fuel that an individual injector flows over a specific period of time



Source: SMP Testing Lab, 2025

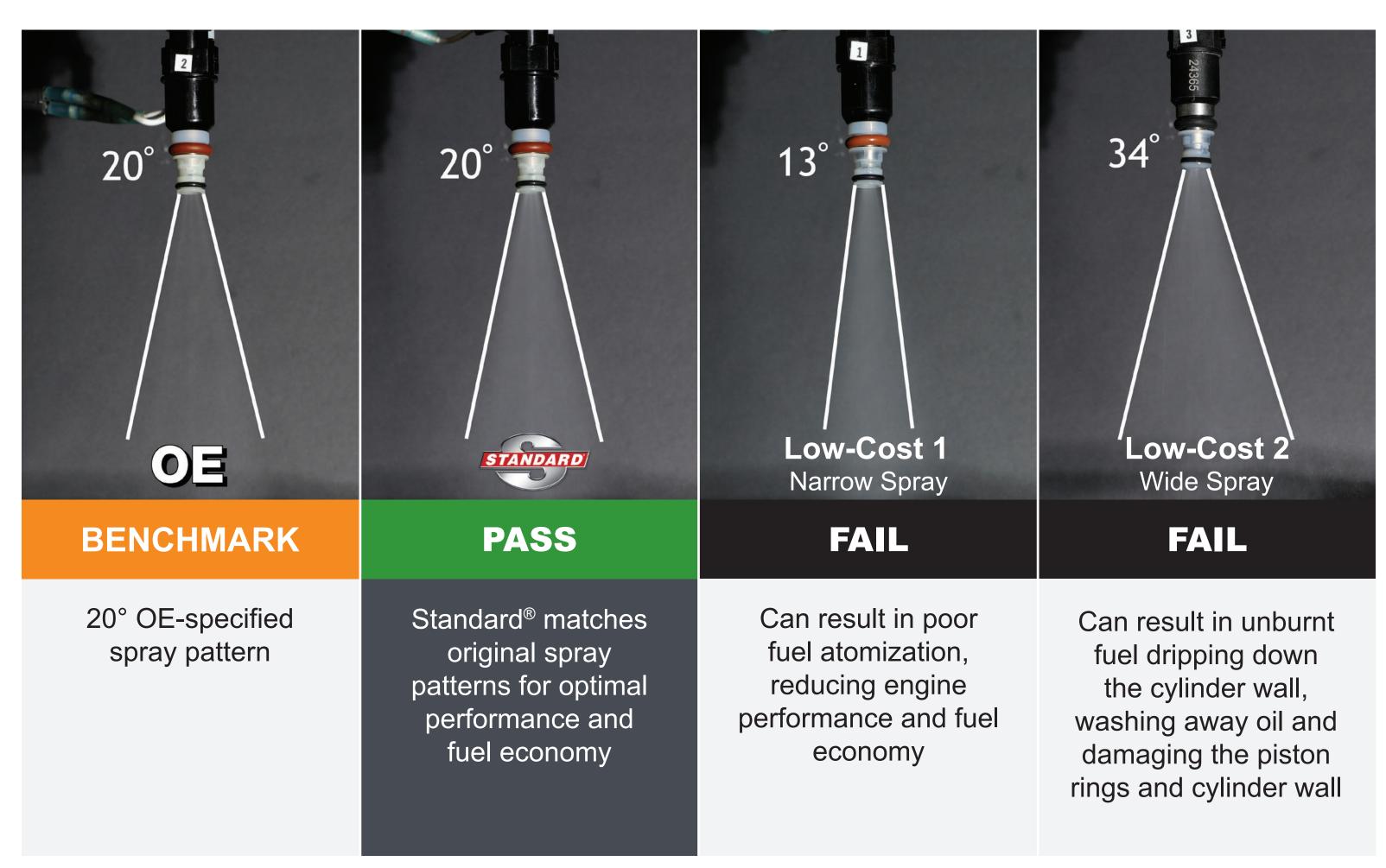
### Fuel Injectors: Tested

Standard® Fuel Injectors are always designed and calibrated to match OE-designed performance. A recent head-to-head comparison test showed that the fuel spray pattern of the Standard® Injector matched OE while the low-cost competitors didn't. Low-cost competitors do not have the same quality control and calibration capabilities, and can produce injectors with poor and inconsistent performance.

The performance of each fuel injector is critical for fuel mileage, vehicle performance and even engine life.

### **Spray Pattern Test**

Measures the shape and symmetry of the fuel pattern sprayed by an individual injector (should be a cone-shaped mist for proper atomization)



Source: SMP Testing Lab, 2025

### The Complete Program

Standard® delivers the most complete
Gas Fuel Injection Program in the
aftermarket. With more than 1,000 Injectors
and hundreds of related components,
including GDI High-Pressure Fuel Pumps,
Fuel Pressure Sensors and Service
Kits, Standard® is your premier singlesource supplier. Injectors are tested and
calibrated to match OE performance
with wide coverage meaning you can
recommend Standard® with confidence,
regardless of what your customers drive.



### Standard® Fuel Injectors

Standard® designs, manufactures, and tests every Injector to precisely match the designed performance of the original injectors.

Standard's coverage of 100% new, never remanufactured Gas Fuel Injectors is unmatched in the aftermarket.



### **Multi-Port Fuel Injectors (MFI)**

770+ MFI Injectors

All Standard® MFI Injectors are flow-matched to each specific application, with advanced laser-drilled metering holes that deliver precise flow and spray patterns. This ensures proper injector performance and optimized fuel economy under all conditions



### **Gasoline Direct Injectors (GDI)**

200+ GDI Injectors

Engineered to optimize the performance and fuel economy of modern GDI engines, each Standard<sup>®</sup> GDI Injector is manufactured and calibrated to match the designed performance of the original



### **Throttle Body Injectors (TBI)**

45 TBI Injectors

Meticulous engineering and precision machining ensures every Standard<sup>®</sup> TBI Injector matches the original it's replacing for fit, form and function to deliver optimal performance and fuel economy



### **TOP MOVERS RANKED:**

### GDI Injectors

### IMPORT APPLICATIONS



### FJ1057

Audi / VW Cars & SUVs (2018-08)





#### **FJ1372**

Honda Trucks & SUVs (2020-16)

2



#### **FJ1146**

Hyundai / Kia Cars & SUVs (2017-12)

3



#### **FJ1438**

Hyundai / Kia Cars & SUVs (2022-15)

4



### FJ1238

Volkswagen Cars (2019-10)

5

### DOMESTIC APPLICATIONS



### FJ1217

GM Trucks, SUVs & Vans (2024-14)



#### FJ1297

GM Cars, Trucks, SUVs & Vans (2025-14)



### FJ1235

Ford Cars & SUVs (2019-14)



#### **FJ1138**

Ford / Lincoln Trucks, SUVs & Vans (2024-11)



### FJ1293

GM Cars & SUVs (2020-16)



### **TOP MOVERS RANKED:**

### MFI Injectors

### IMPORT APPLICATIONS



### FJ485 Honda / Acura Cars & SUVs (2017-03)



FJ585
Toyota
Trucks & SUVs
(2004-99)



FJ1182
Hyundai / Kia
Cars & SUVs
(2023-11)



FJ484
Honda / Acura
Cars & SUVs
(2011-03)



FJ1046
Honda / Acura
Cars & SUVs
(2015-08)











### DOMESTIC APPLICATIONS



FJ1147
Chrysler / Dodge / Jeep / RAM
Cars, Trucks, SUVs & Vans
(2020-11)



FJ1116

Ford / Lincoln
Cars, Trucks, SUVs & Vans
(2022-11)



FJ315

GM

Trucks, SUVs & Vans
(2007-99)



FJ1000
Ford / Lincoln / Mazda
Cars & SUVs
(2015-07)



FJ732
Chrysler / Dodge / Jeep / RAM
Cars, Trucks & SUVs
(2018-05)

### Related Components

**GDI** 

GDI fuel systems are complex and feature more parts than a traditional MFI fuel system. Standard® doesn't simply stop at injectors. We provide everything GDI-related to keep this complex, high-pressure system operating as designed.



#### **High-Pressure Fuel Pumps**

GDI injectors operate up to 2,000 psi. Maintaining fuel pressure is critical to the optimal performance of GDI systems

110+ SKUs with coverage through 2025



#### **Fuel Feed Lines**

Direct-fit OE replacement lines for high- and low-pressure applications

100+ SKUs with coverage through 2025



#### **Fuel Pressure Sensors**

Monitor flow to deliver precise fuel injection performance

110+ part numbers for import and domestic applications



#### O-Rings, Gaskets, and Plates

The right O-rings, gaskets and GDI plates are essential to a proper system service

Import and domestic coverage



#### **Injector Seal & Service Kits**

When servicing GDI injectors, new O-rings and seals are required — never reuse O-rings and seals from an injector you are replacing

30+ SKUs covering import and domestic applications



#### **Camshaft Followers**

Direct-fit OE replacement ensures proper fit, form, and function

20+ SKUs with coverage through 2023

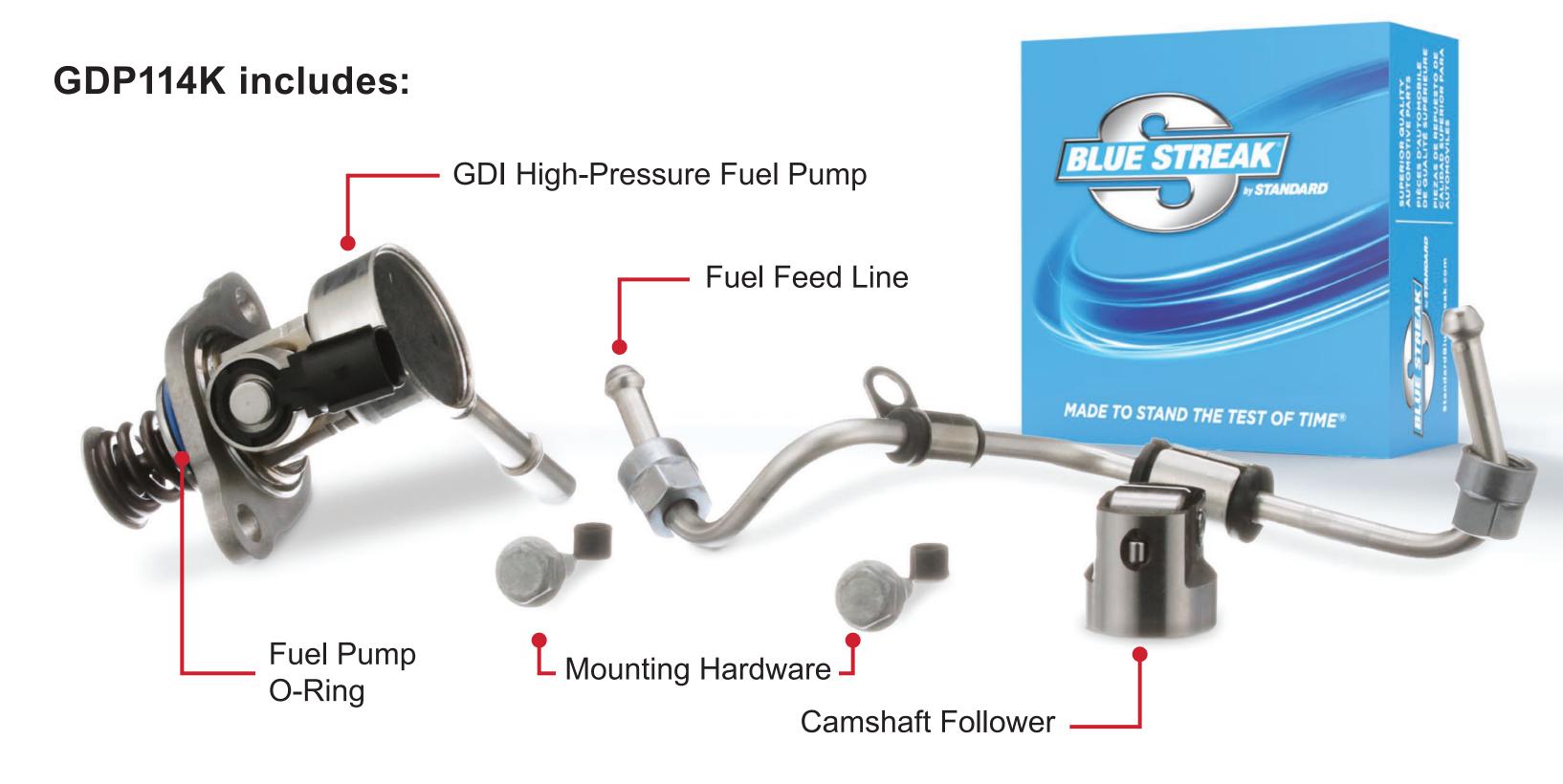


### Product Spotlight

Blue Streak® GDI High-Pressure Fuel Pump Kits

Blue Streak's all-in-one GDI High-Pressure Fuel Pump Kits include all of the necessary components to do the job right the first time.

High-pressure GDI systems rely on more than just the high-pressure pump to operate correctly. We offer complete GDI High-Pressure Fuel Pump Kits so that the entire system can be replaced, ensuring trouble-free operation after the repair.





**GM Cars and SUVs** 

(2019-16) VIO: 1.6M

### Related Components

### MFI

The best new fuel injector can't perform as designed with worn O-rings, failing related components, or low fuel pressure.

Standard's complete Fuel Injection
Program provides technicians with
everything they need for a complete
fuel system service.



#### **Fuel Pressure Sensors**

Monitor flow to deliver designed fuel injection performance

110+ SKUs with coverage through 2025



### **Fuel Pressure Dampers**

Standard® reinforced washers help prevent dangerous fuel leaks and premature failure

40+ Dampers for import and domestic applications



### **Fuel Pressure Regulators**

Engineered for vehicle-specific fuel delivery and feature robust housing to reduce the chance of leakage

430+ SKUs with coverage through 2025



#### **Fuel Injector Connectors**

Standard® offers the right quality connectors for fuel injectors and related fuel system components

Import and domestic coverage through 2025



#### **Fuel Injector Seal Kits**

New O-rings and seals will help ensure a proper install. Our O-Rings are made from high-quality materials to ensure performance and longevity

130+ O-Ring and Seal Kits specifically designed for MFI fuel injection systems





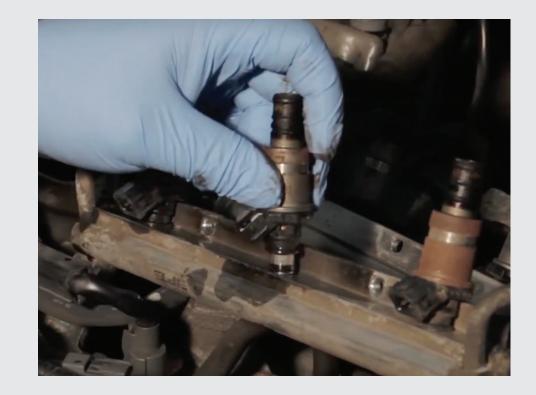
### Standard<sup>®</sup> Solutions

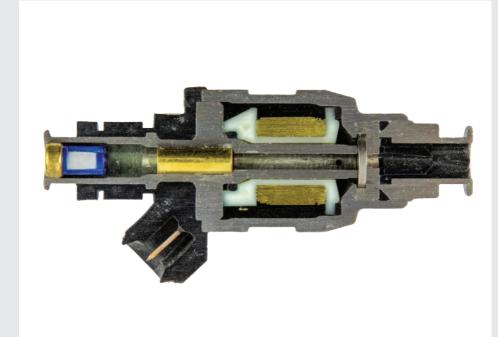
Standard® Gas Fuel Injectors are always all-new and do not contain any old or remanufactured components. This is why technicians trust Standard® Injectors to not only perform, but also last on their customers' vehicles.

### **PROBLEM:**

Electrical issues are one of the most common reasons that fuel injectors fail

- Gas fuel injectors are actually sealed electronic components.
   The overmold makes it almost impossible to disassemble the injector
- Most "reman" gas injectors reuse the old, original electronic components. These components have already experienced thousands of heat cycles before they are ever installed
- Most "reman" injectors are just old injectors that have been cleaned and flushed





All Standard<sup>®</sup> Gas Fuel Injectors contain 100% all-new components for a longer service life

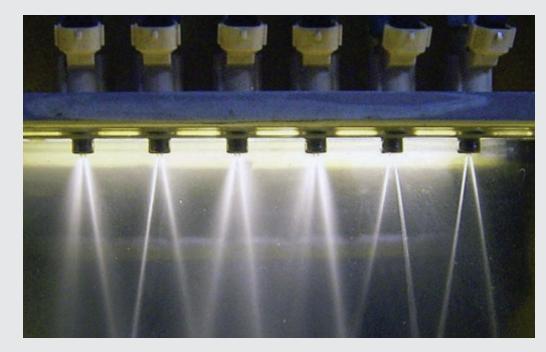




### Standard® Solutions

Over time, fuel injectors can become slightly clogged and while the vehicle may run, installing a new set of matched injectors is the best way to restore performance on a higher mileage vehicle. Our most popular Injectors are available in Multipacks, making it easier to restore performance and improve reliability with one part number.



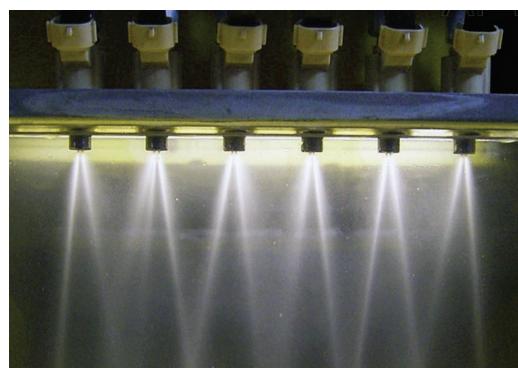


High-Mileage Injectors

### Problem: Engine Misfires, Loss of Power, Check Engine Light

Clogged or worn injectors can cause engine misfires, loss of power and even damage engine and emissions components





New Injectors from Standard®

#### Standard® Solution: Standard® Fuel Injector Multipacks

Balanced fuel delivery is crucial to proper engine operations – If one injector is being replaced on a higher mileage engine, experts recommend installing a new matched set to help restore performance and prevent future misfires

With one part number, technicians can install a new set of matched fuel injectors to help restore fuel mileage and performance



### USA Manufacturing

The majority of Standard's Fuel Injectors are manufactured in America at our state-of-the-art facility in Greenville, South Carolina. This vertically integrated, 180,000-square-foot, ISO 9001-certified facility controls each step of the manufacturing process, ensuring consistent product quality and correct on-vehicle performance.



Gas Fuel Injector internal coil winding process



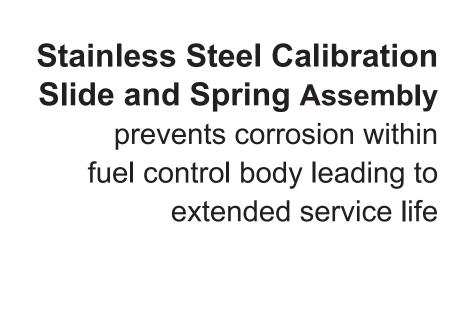
### Standard® Quality

### **GDI Fuel Injectors**

GDI fuel injectors are subject to extreme temperature and pressure from within an engine's combustion chamber. Standard® GDI Injectors feature high-temp Viton® seals and a stainless steel internal calibration slide for consistent, long-term performance in harsh conditions.

### **Precision-Wound and Trimmed Solenoid Windings**

allow the computer to command efficient fuel delivery



**High-Temp** Viton® O-Rings enable prolonged sealing of injector under extreme heat conditions



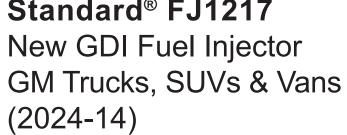
O-Rings and Umbrella Seals

are included to ensure a trouble-free install

Standard® FJ1217 New GDI Fuel Injector (2024-14)



**Retaining Clip** keeps the injector in position while protecting against vibration

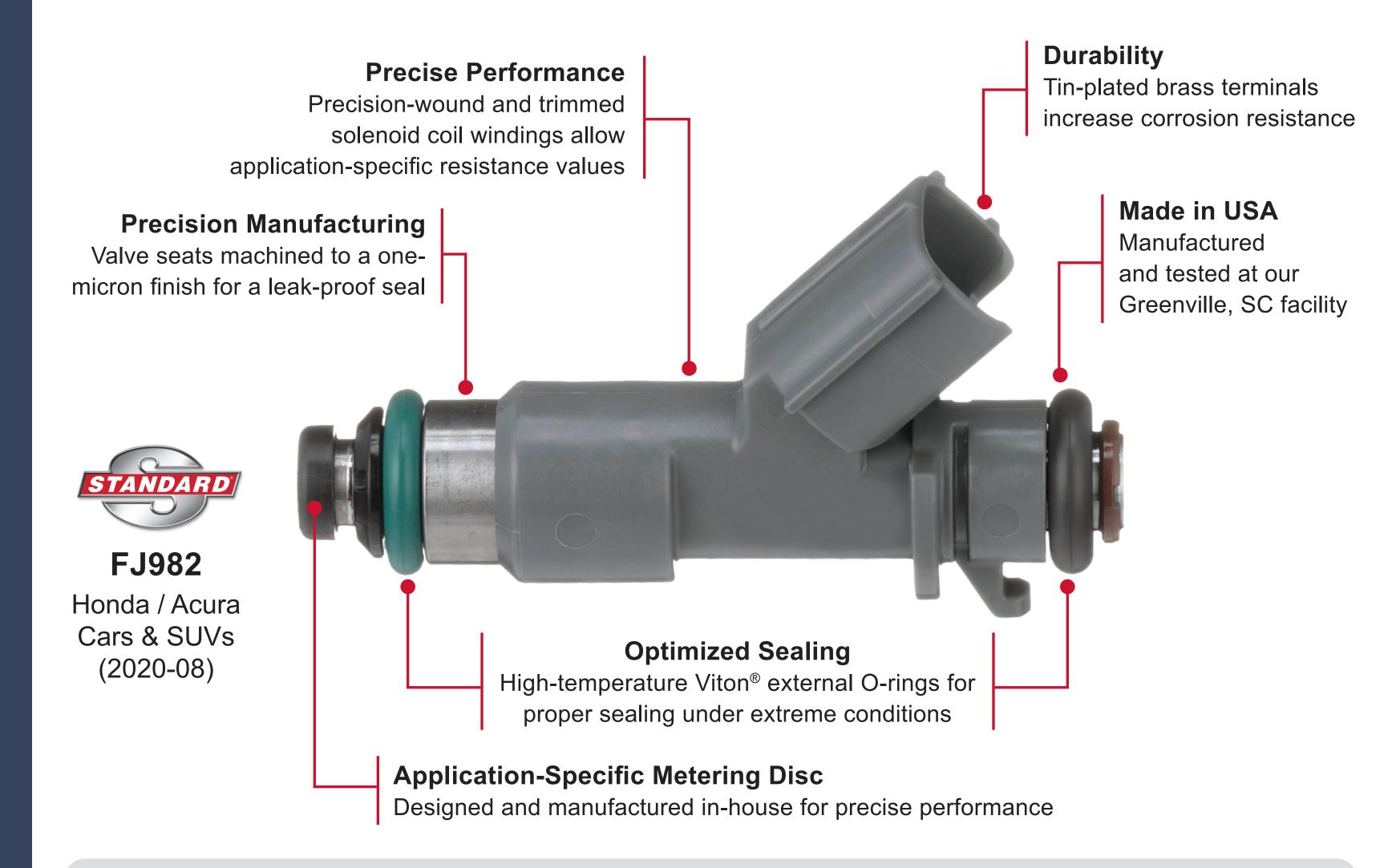




### Standard® Quality

### **MFI Fuel Injectors**

Standard® Gasoline Fuel Injectors are always new, never remanufactured, and are precision-engineered to match OE injector spray pattern and flow rate. New Standard® MFI Injectors help optimize engine performance, fuel economy and emissions.





Precision Matters: The location and size of the holes must match OE exactly for precise performance



The metering disc must also be indexed correctly onto the injector

Examples of actual metering discs used by Standard®

# Standard® Pro Training Tech Tips

Standard® Pro Trainers have installed hundreds of fuel injectors and trained thousands of technicians. Here's what they say to look out for during a fuel injector install.



Some GDI injectors, such as Toyota, have a specific calibration number on them and must be replaced with an injector with the same or a similar calibration. Pay close attention to the specific number on the injector



When replacing GDI injectors, always replace the one-time-use steel lines that are typically indicated with a yellow sticker and an image of a garbage can

# Standard® Professional Training

**Award-Winning In-Person, Live Virtual, and Online Learning** 

Standard® Pro Training delivers accredited classes that educate technicians in the latest automotive repair technologies, and techs can earn CEU credits.

An extension of Standard® training, our extensive YouTube video library has over 700 technical and installation videos.



#### **Available Classes**

ASE Test Prep - A8 Engine Performance

Diagnosing Electronic Fuel Pump Controls

E85 & Flex Fuel Vehicles

Fuel Trim Diagnostics

Gasoline Fuel Injection Fundamentals

Lean Engine Diagnostics

Rich Engine Diagnostics



#### **Available Classes**

**Advanced Drivability** 

Analytical Approach to Diagnostic Problems

Ford EcoBoost

Fuel Injection Systems - From Guesswork to Game Plan to Repair

Labscope Power User

Vehicle Emission Systems - Keeping It Clean



For information on replacing fuel injectors and related components, search "Injector" on the **Standard Brand** YouTube channel or scan the QR code for the <u>Gas Fuel Injection playlist</u>







