### **GAS FUEL INJECTION & RELATED PARTS**

## Highlights

Complete Fuel Injection Program with more than 1,100 new, not remanufactured GDI, Multi-Port, TBI Injectors and related components

Engineered and manufactured in our IATF 16949-certified facility in Greenville, SC

Application-specific flow and spray patterns to match OE specs and increase fuel economy



What's in your box?™

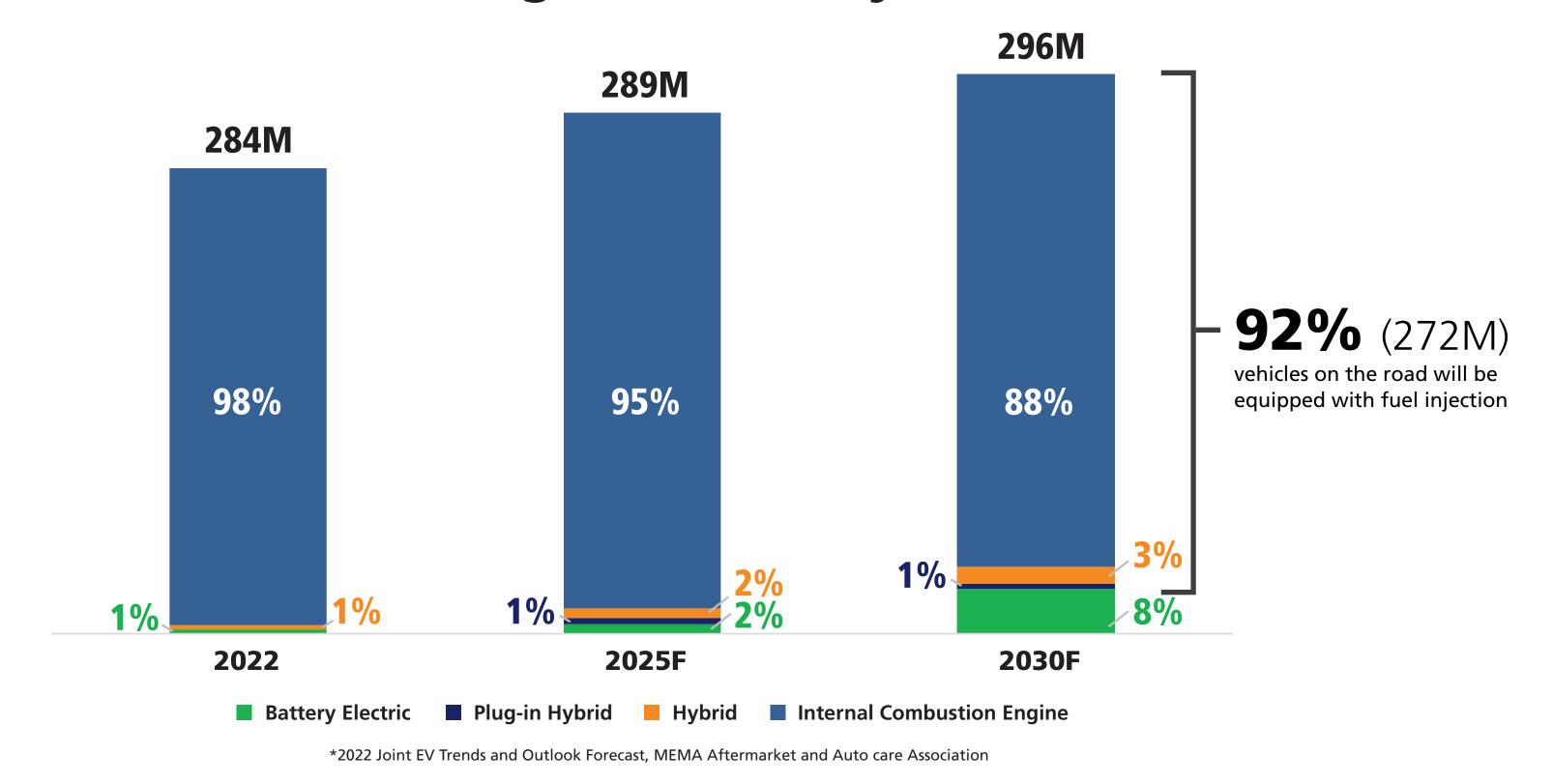


# Growing Market

While electric vehicles are making headlines, most new car buyers are still choosing gasoline (including hybrid) vehicles. In fact, 94% of all new cars sold in 2022 were equipped with an internal combustion engine.

Fast forward to 2035, roughly 94% or more of the cars entering service bays will have internal combustion engines with some type of fuel injection that will require maintenance and repair.

#### **Vehicle Registrations by Powertrain\***



#### **Did You Know**

Many modern vehicles are now equipped with both Multiport and Direct Injection. This helps improve fuel economy, reduce emissions and reduces carbon build-up on the valves, and can also lead to more service opportunities.





## Sales Opportunities

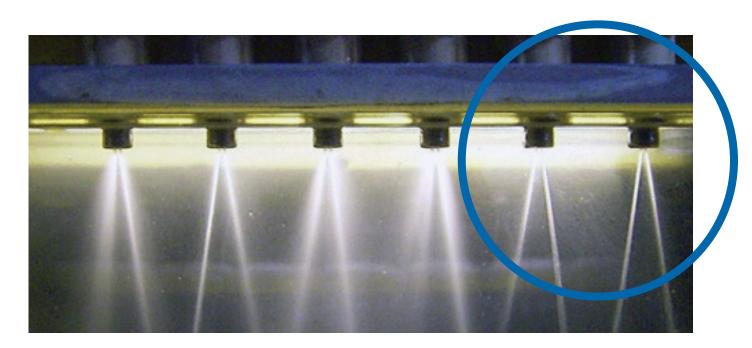
#### **Replace in Sets**

When one fuel injector fails, replace all of the injectors with a full new set, especially on high-mileage vehicles.

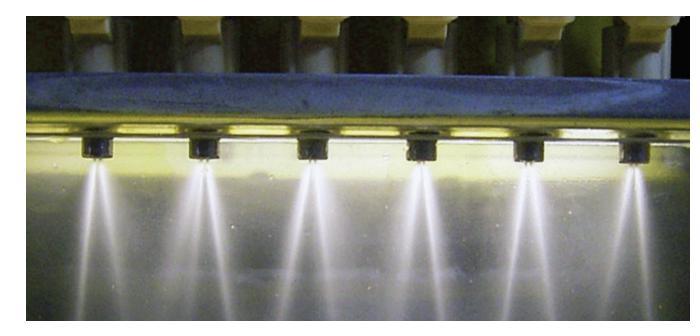
One worn or failed injector means the other injectors have been subjected to the same extreme wear and tear or fuel contamination.

In the long run, the most cost-effective repair is to replace the full set.

### Replace Fuel Injectors in Sets



**High-Mileage Injectors** 



**New Injectors** 

#### **Did You Know**

Replacing only the worn or failed injector may create a fuel imbalance, as high-mileage injectors have unmatched spray patterns that increase fuel consumption. New Standard® Injectors have evenly matched spray patterns that improve fuel economy.

# Complete Program

Standard® Gas Fuel Injectors are always 100% new, not remanufactured.

With unmatched coverage, Standard® Injectors are meticulously designed, manufactured, and tested to exceed the quality of the failed original injector they are replacing.

We have a full offering of fuel injection components including fuel pressure sensors, regulators, damper assemblies, fuel/water separator sensors, O-ring kits, and more.



### Multi Port Fuel Injectors (MFI)

More than 900+ 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 for proper injector performance and improved fuel economy under all conditions



### Gasoline Direct Injectors (GDI)

170+ GDI Injectors (and growing)

Built to deliver maximum

performance and fuel economy,
each GDI Injector is precisionengineered to match the failed OE
injector it is replacing



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

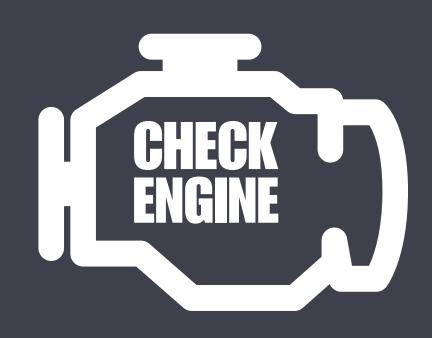
50+ TBI Injectors

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



Gas Fuel Injection StandardFuelinjection.com

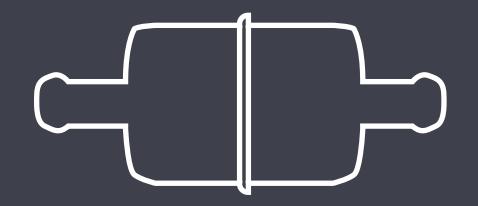
# Impact on Engine Systems



Faulty injectors will
typically trigger the
check engine light and
set a variety of trouble
codes such as P0171 or
P0174 which indicates an
incorrect air/fuel ratio



If an injector is "stuck on"
it may flood the cylinder(s),
flood the crankcase, and fill
the exhaust with raw fuel —
This could result in engine
failure and damage additional
exhaust components



When an injector is
being replaced, it is also
recommended that a
new fuel filter and new
injector seals are also
installed to help reduce
comebacks

Gas Fuel Injection StandardFuelinjection.com

### What's New

A complete program means regularly introducing new part numbers. Standard® is constantly researching, testing, and releasing MFI and GDI Injectors for latemodel vehicles.

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



FJ1540
Honda Civic
(2019-16)
VIO: 690K



FJ1516
Honda Insight / Clarity
(2021-18)
VIO: 102K



FJ1502
Audi / VW Cars
(2022-15)
VIO: 482K



FJ1534 Infiniti Q50 / Q60 (2019-16) VIO: 133K









### What's New

#### **RELATED PARTS**

New applications are continually being added to our complete Gas Fuel Injection Program. It's how we continue to deliver the most complete fuel injection offering in the industry.

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



#### **Fuel Pressure Sensor**

#### **FPS140**

Ford Cars, Trucks & SUVs (2021-20) VIO: 540K



#### **Fuel Pressure Sensor**

#### **FPS141**

Ford Trucks & SUVs (2021-19) VIO: 1.2M



#### **Fuel Pressure Sensor**

#### **FPS145**

Jeep / Fiat SUVs (2022-19) VIO: 53K



#### **Fuel Injector Seal Kit**

#### **SK173**

Ford Trucks, SUVs & Vans (2020-11) VIO: 6.8M



### **GDI High Pressure Fuel Pump**

#### **GDP735**

Honda / Acura Cars & SUVs (2020-15) VIO: 2M



#### **Fuel Injector Connector**

#### **S2871**

Ford / GM Cars & SUVs (2021-14) VIO: 3.3M



**Gas Fuel Injection** 

## Top Movers





FJ1057
Audi / VW Cars & SUVs (2017-08)



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



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



**FJ1146**Hyundai / Kia Cars & SUVs (2017-12)



FJ490
Honda / Acura Cars & SUVs (2004-00)

# DOMESTIC APPLICATIONS



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



FJ315
Chevrolet / GMC Trucks & SUVs (2007-99)



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



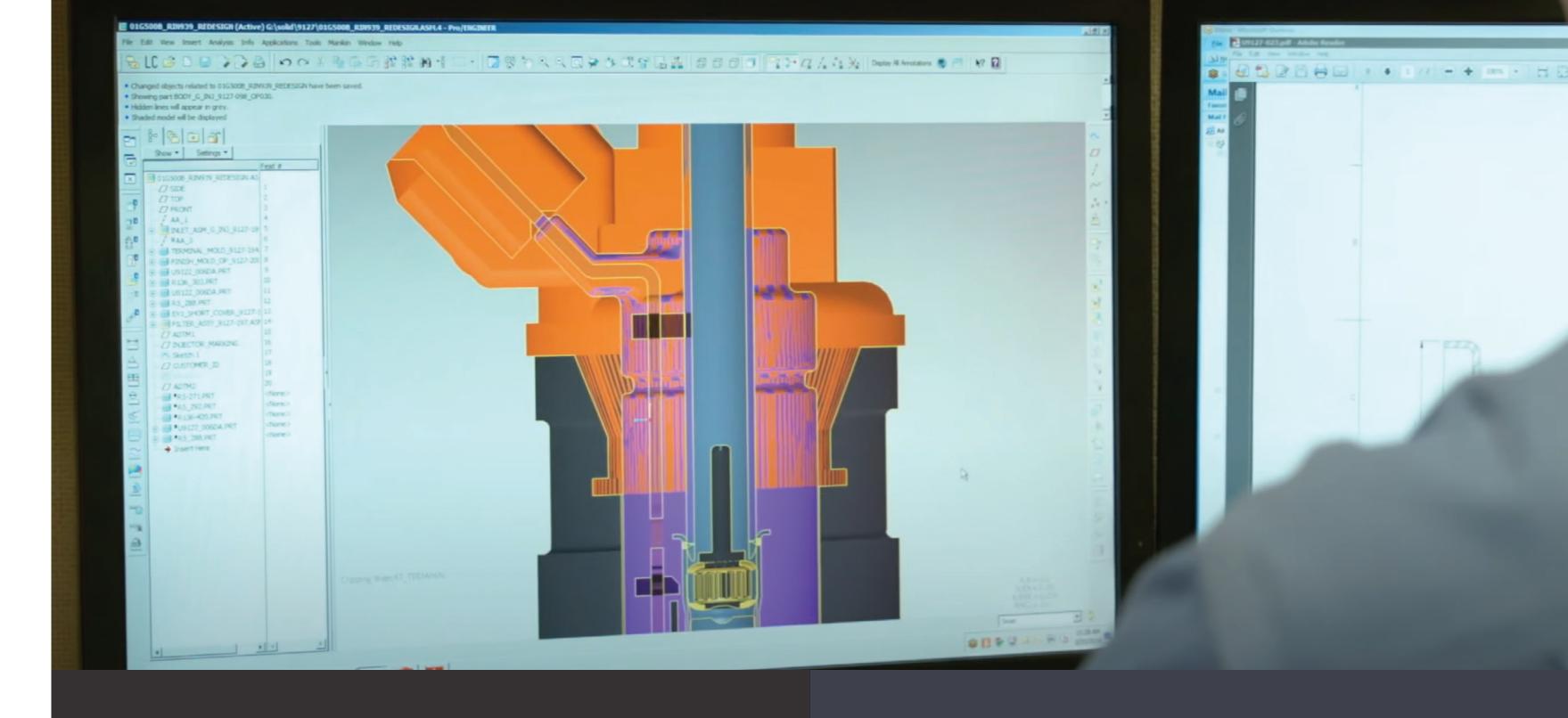
FJ1116
Ford Cars, Trucks & SUVs
(2022-11)



FJ474
Dodge / Jeep / RAM
Trucks & SUVs
(2012-04)

# **Engineering Improvements**

Precision engineering means a commitment to flow and spray pattern matching, and strict requirements for flow rates to deliver better fuel economy and emissions.



Standard® Fuel Injectors use

multiple tip shapes and inserts

to match OE-style spray patterns,

ensuring positive control of

fuel delivery for maximum

performance and service life

Standard® Fuel Injectors are
advanced flow-matched to each
specific application for balanced
fuel delivery

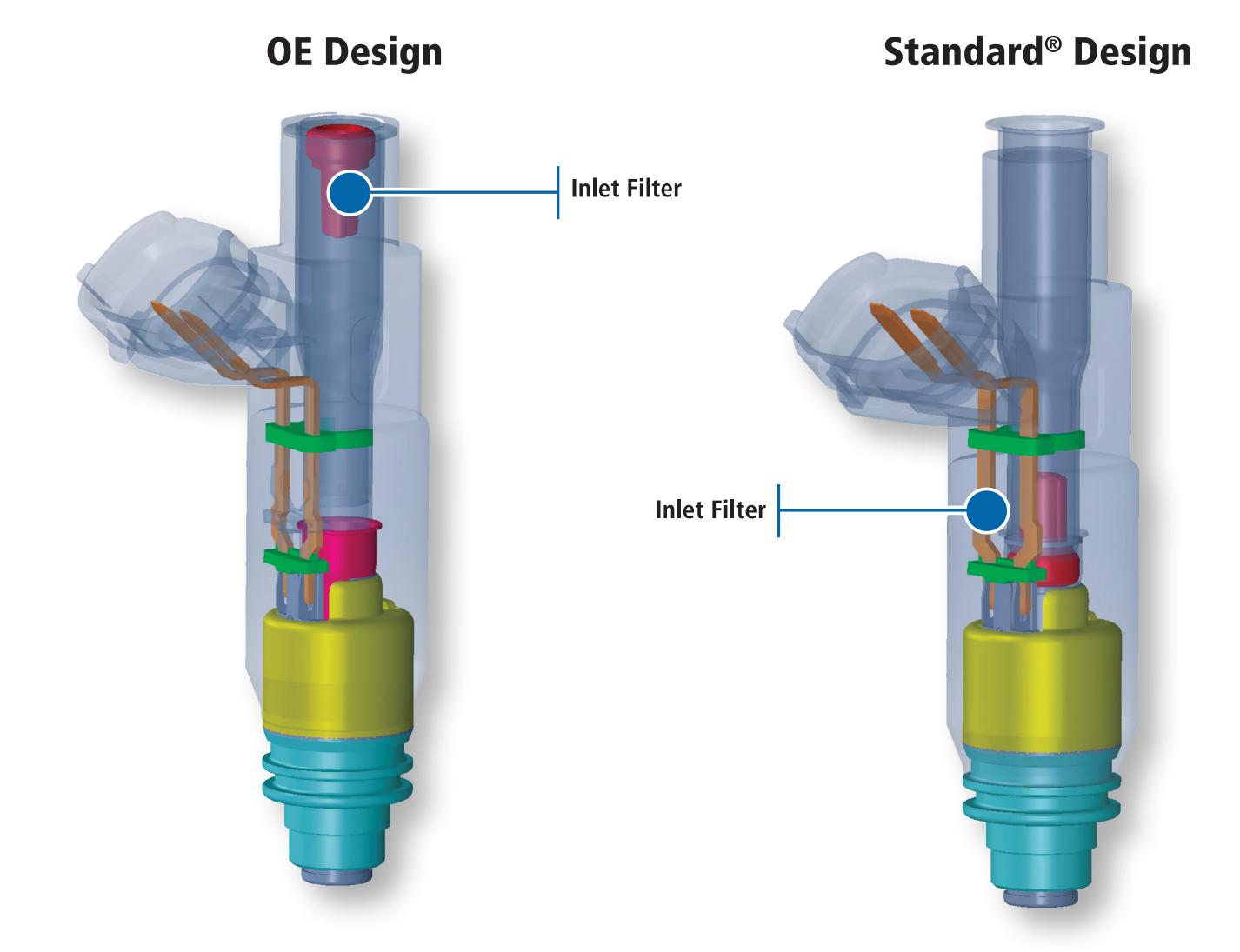


StandardFuelinjection.com

# Standard® Engineering

Standard® engineers identified a weakness in the OE design of these multi-port injectors. The OE inlet filter is installed at the end of the fuel inlet tube, increasing the risk of contaminants being introduced.

To eliminate this potential for contamination, we moved the filter location, adding it during the middle of the assembly process. Problem solved.



Our engineers improved on the OE design by relocating the inlet filter to protect against contamination



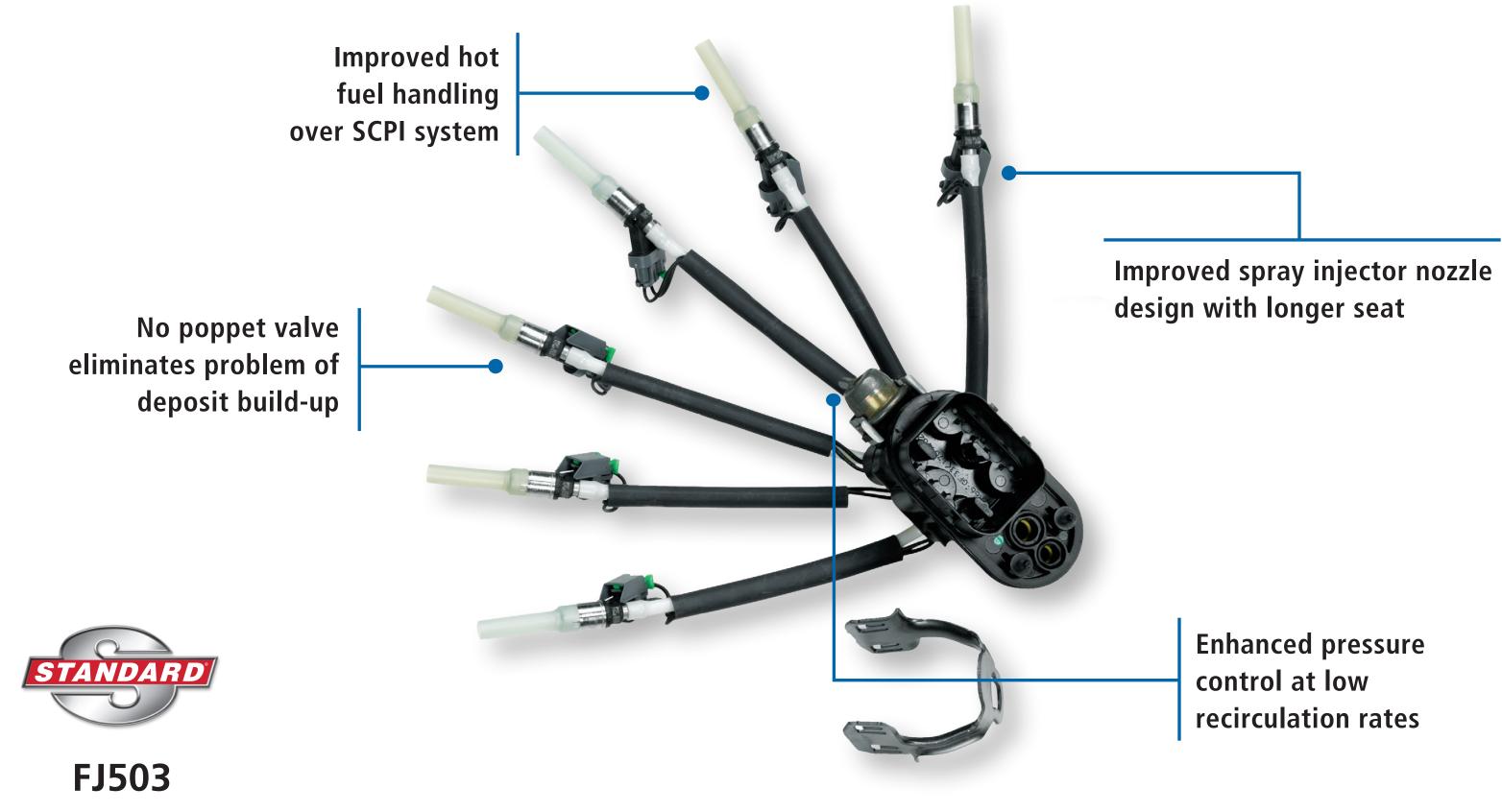
StandardFuelinjection.com

# Standard® Engineering

GM's Vortec engines are equipped with a Sequential Port Injection System (SCPI) featuring a poppet valve that is prone to sticking.

Standard® engineers eliminated the OE failure point by moving the injector to the end of the tube.

Standard's improved system has many advantages including improved sealing, better response, faster temperature stabilization and reduced emissions.



Multi-Port Fuel Injection (MFI) System GM V6 4.3L (2014-96)

#### **Did You Know**

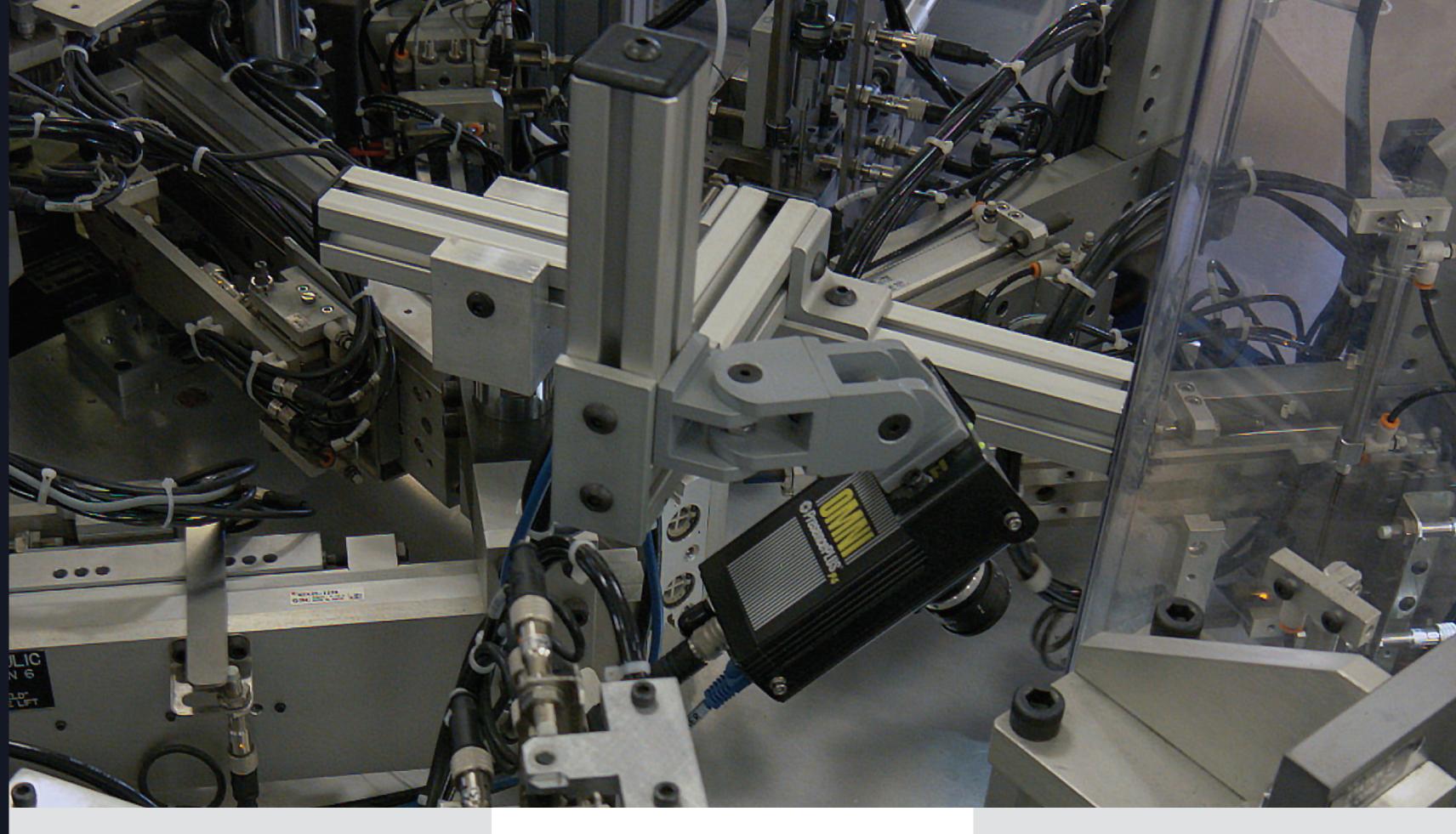
Standard's improved design retrofits to cover the older mechanical "poppet" style applications as well as the current electronic valve design in this engine family

# **Expert Manufacturing**

#### **Designed and Built in the USA**

Standard® Fuel Injectors are expertly manufactured at our vertically integrated facility in Greenville, SC.

From raw material to finished product, every Injector is subjected to extensive end-of-line and life-cycle testing, ensuring they meet our strict quality control standards.



Engineered and manufactured in our IATF 16949-certified facility in Greenville, SC

Precision quality,
application-specific
performance, durability,
and consistent product
reliability

100% NEW
(Not Remanufactured)
Gasoline Injectors



# Testing and Validation

To make sure every Fuel Injector meets our strict standards for precision quality, enhanced performance, and extra durability, Standard® performs initial life-cycle validation and 100% end-of-line testing. What's more, we subject our Fuel Injectors to more than 35 different tests and inspections.



### Here are just a few of the elements and components that we test and inspect:

Body Color Endurance Spray Pattern

Body Style Flow Linearity Static Flow Rate

Coil Resistance Flow Matching Thermal Cycle Testing

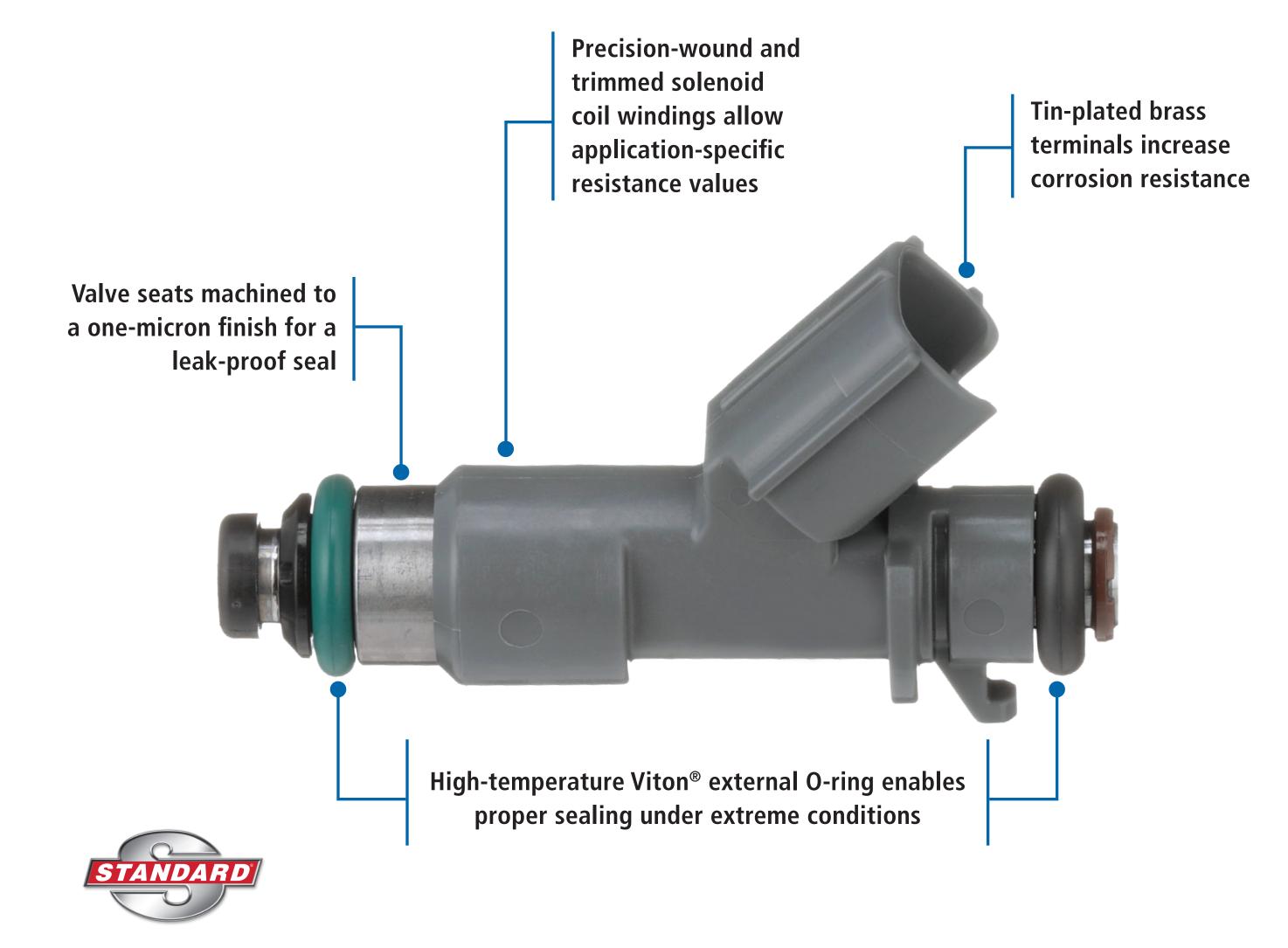
Connector Shape Humidity Storage 3 Axis Vibration

Dynamic Flow Rate Shock Load and more!



# Quality Designed

Standard® Gasoline Fuel Injectors are always new, never remanufactured. Precision engineered to match injector flow, spray pattern, and flow rate, Standard® Injectors deliver better fuel economy and emissions.



FJ982

Honda / Acura Cars & SUVs (2018-08)

# Related Parts

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.

For our complete GDI Program, refer to the GDI Digital Product Portfolio.



#### **Fuel Pressure Sensors**

Monitors flow to deliver designed fuel injection performance

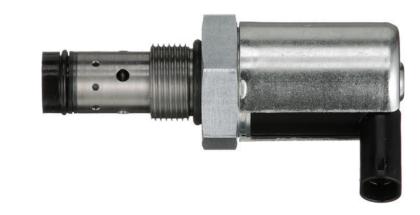
200+ SKUs with coverage through 2023



#### **Fuel Pressure Dampers**

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

70+ 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

550+ SKUs through 2022



#### **O-Ring 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

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



#### **Fuel Injector Connectors**

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

Import and domestic coverage through 2023



#### **GDI Components**

Standard® offers hundreds of GDI system replacement parts — High-Pressure Fuel Pumps, Pressure Sensors, Fuel Feed Lines, O-rings, Gaskets, Service Kits and more



**Gas Fuel Injection** 

# Standard® Pro Training Tech Tip

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.



When using Fuel Trims to diagnose fuel injector faults, it is important to keep in mind that one injector that is out of spec will affect the entire bank — One over-fueling injector will offset 3 under-fueling injectors, so that's why replacing in sets is advised



Always replace the fuel filter and flush
the rail and lines when replacing fuel
injectors – Ensure that the intake bore
is clean and the seals and O-rings are
properly lubricated before installing
the injectors



StandardFuelinjection.com

# 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 500 technical and installation videos.





**Available Classes** 

**E85 & Flex Fuel Vehicles** 

**Lean Engine Diagnostics** 

**Rich Engine Diagnostics** 

**Diagnose Electronic Fuel Pump Controls** 

**Fuel Trim Diagnostics** 

Gasoline Fuel Injection Fundamentals



**Available Classes** 

**Honda / Acura Diagnostics** 

**Nissan / Infiniti Diagnostics** 

Ford EcoBoost

**VW / Audi Diagnostics** 

**GM Engine Controls** 

**Toyota / Lexus Diagnostics** 



For information on replacing fuel injectors and related components, search "Injector" on the **StandardBrand** YouTube channel

