

## SALES REPRESENTATIVES

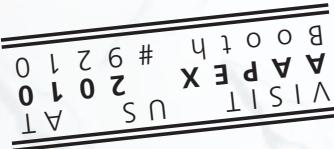
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Part #	Make	Year	Qty
FPR1	Chrysler, Dodge, Ford, Lincoln, Mazda, Mercury, Plymouth	99-81	3
FPR2	Acura, Buick, Cadillac, Chevrolet,		
	Geo, Honda, Isuzu, Oldsmobile, Pontiac	99-90	2
FPR3	Buick, Chevrolet, Oldsmobile, Pontiac	99-93	1
FPR4	Ford, Lincoln, Mazda, Mercury	99-88	2
FPR5	Buick, Cadillac, Chevrolet, Isuzu, Pontiac	05-96	1
FPR6	Buick, Chevrolet, Oldsmobile, Pontiac	02-95	1
FPR7	Acura, Chevrolet, Isuzu	06-96	1
FPR8	Cadillac, Honda, Isuzu, Oldsmobile	02-95	1
FPR9	Buick, Cadillac, Chevrolet, Oldsmobile, Pontiac	94-87	1
FPR10	Buick, Chevrolet, Oldsmobile, Pontiac	05-00	1
FPR11	Buick, Chevrolet, GMC, Isuzu, Oldsmobile, Pontiac	00-91	1



OEM Part # FPR1, FPR9, FPR10

OEM is proud to announce its new line of Fuel Pressure Regulators!!! With only 11 FPR (Fuel Pressure Regulator) part numbers, OEM covers the most popular domestic and import applications ranging from 1981 to 2006. Applications, interchanges and images have already been uploaded onto OEM's website. Please see the application and OE interchange reference shown here. Don't forget to ask our sales representatives for pricing.

### NEW PRODUCT CATEGORY: FUEL PRESSURE REGULATORS

# ON THE MOVE

VISIT US AT  
AAPEX 2010  
Booth #9210



# ON THE MOVE

## NO CAP, NO ROTOR, NO PROBLEM

The automotive industry is an endlessly evolving stage. New models come out every year and whole new technologies are being introduced at an ever increasing rate of speed. In recent times, the introduction of coil on plug technology has now put the traditional distributor cap and rotor right along side timing points on the long road to obsolesce.

With any new technology comes a learning curve. Different components with alternate designs and functions mean that servicing a late model vehicle requires a different approach. Much the way replacing ignition points has become a rare task, coil on plug ignition systems are taking three regular service items off of the maintenance menu: distributor caps, rotors and in some cases, ignition cables (spark plug wires). However, coil on plug systems do require one service item in particular... ignition coil boots.



Coil boot scorched by arcing spark plug

The ignition coil boot exists in an extremely harsh

environment for something expected to insulate 40,000 volts from a nice solid ground a mere fraction of an inch away. The coil boot can fall victim to valve cover gasket leaks, spark plug tube o-ring leaks, coolant leaks, and sometimes even the intrusion of water from the environment into the engine bay.

In the past, any time spark plugs were replaced; spark plug wire replacement was suggested as well. In the world of coil on plug ignition systems, the coil boot contains the high voltage spring which conducts energy down from the ignition coil to the terminal of the spark plug. This spring is the coil on plug equivalent of a spark plug wire, and sometimes includes a resistor that shields unwanted radio frequency (RF) interference, just as spark plug wires are shielded to prevent RF interference. Be sure to inspect the ends of the spring within the coil boot when installing to be absolutely positive a sound connection is made from coil to boot to spark plug.

The repair and replacement of gaskets and seals in and around the valve cover and head are a fairly common service items. A leaking intake manifold gasket that contains coolant passages will quickly bring a customer in for

service due to coolant loss and overheating. Many engine designs have provisions for coolant passages thru the intake manifold and throttle body to improve fuel atomization. Consider the fact that these components are either mounted to, or are in close proximity of the cylinder head and ignition coils, so be sure that all coolant lines and any gaskets for intake manifolds, throttle bodies etc. are not leaking.

Valve cover gaskets and spark plug tube O-rings in particular are often replaced on higher mileage vehicles. These seals wear out due to exposure to used engine oil and heat. If the oil leaks onto coil boots then deterioration can occur. This negates the boots ability to insulate and increases the chances of a misfire occurring due to arcing. This is also a very good time to replace spark plugs, especially when dealing with the ever popular transverse V engine set up which usually appears with the rear bank head as close to the firewall as physically possible and an intake manifold which must be removed as well.

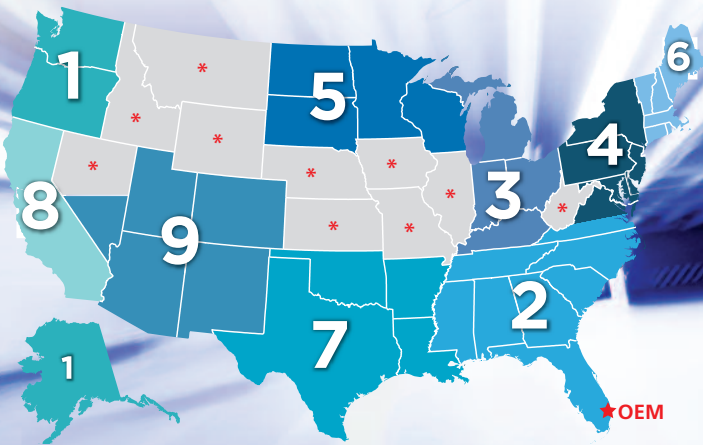
Anytime these types of repairs are performed on the cylinder head, coil boot replacement

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## We Have America Covered!

See Sales Representative's Locations on Back Page

\* Please call us directly at 1-800-253-7864 for more information should you not have an assigned sales representative.



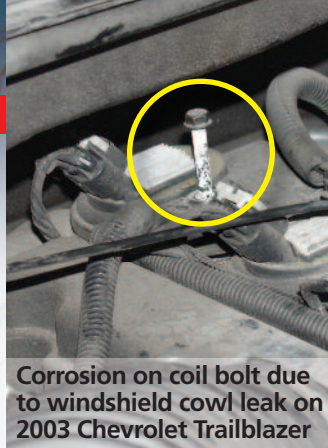
## NO CAP, NO ROTOR, NO PROBLEM CONTINUED...

should be included in the job. This insures that contamination from oil or coolant has not weakened the boot material. Additionally it protects the investment made in labor and parts for new spark plugs, especially in consideration of the fact that many late model vehicles now require expensive platinum or iridium long life spark plugs as the OE replacement.

Moisture under the hood from uncommon sources may also be the cause of misfires, coil damage, and coil boot damage as well. These include refrigerant lines dripping condensation onto coils, water leaking down

past the windshield cowl onto coils (General Motors TSB# 06-06-04-048B) and (Toyota TSB# EG063-05), water leaking down hood scoops or "Air Grilles" in the hood (General Motors TSB# 09-06-04-025) and finally the possibility loose heater hose connections leaking on coils. Vehicles subjected to off road environments involving water crossings and frequent degreasing or pressure cleaning engines as part of regular maintenance can fill the plug wells with water. Remember, never point a pressure washer directly at wiring harnesses, electrical or electronic components, or the spark plug valley.

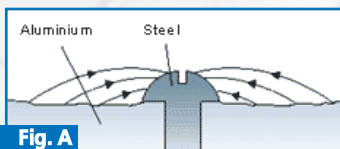
Ignition coils themselves face many forces that can lead to their untimely demise. Regular inspection and servicing of the ignition coil boot for wear, contamination, and damage can save the ignition coil, which is a much more expensive proposition when it comes to replacement.



Corrosion on coil bolt due to windshield cowl leak on 2003 Chevrolet Trailblazer

## WHY DISTRIBUTORLESS IGNITION COMPONENTS WEAR OUT

Why replace COP boots? Despite vehicle manufacturers claiming 100,000 mile tune up intervals with exotic metal spark plugs, any sparkplug with a steel shell can seize or gall in modern aluminum cylinder heads due to the galvanic reaction between the two electro-chemically dissimilar metals. Whenever electrical current is passed between anode and cathode metals in the presence of an electrolytic solution such as common water, the sacrificial anodic metal will deposit itself upon the opposite cathode material (Fig. A).



Common examples of similar galvanic reactions are electroplating processes, zinc anodes used on boat, corrosion of aluminum house wires used with standard copper switches and outlets and aluminum rims welded onto the steel hubs of vehicles. A valid argument can be made to replace plugs at an earlier interval so the threads are not stripped upon sparkplug removal at the maximum allowable interval. Replacement spark plugs should have a nickel plated shell and be given a light coating of oil on the threads, but not so much to risk fouling. NEVER, use anti-seize compound on the threads or risk over tightening and stripping of threads. Stretching and distorting the shell can inhibit proper heat dissipation and the plug can run excessively hot. An excessively hot plug can cause early detonation and damage to internal engine components. After time, the boots are often melted to the porcelain insulator of the sparkplug and become damaged as a result of spark plug removal. Volatile combustion by-products and various

solvents found in used motor oil can cause damage to rubber and silicone. A chief concern among these is oxidation of old engine oil from to exposure to oxygen and moisture, eventually causing the old oil to become acidic. The combination of exposure to combustion byproducts and heat speed this oxidation process up, eventually taking its toll on internal engine components and whatever the oil may be leaking on as well... such as spark plug boots, wires, and today, coil on plug boots.



Fig. B

Ozone and corona attack the boot material and can cause dryness, cracking and stiffness resulting in loss of elasticity. The boots ability to seal tightly on the porcelain thus preventing high voltage leakage is greatly diminished by these forces. (Fig. B is an extreme example of corona shown for illustrative purposes.) The gasses produced as a result of high voltage are trapped in the sparkplug well and not well ventilated. O<sub>3</sub> (more commonly known as Ozone) is comprised of 3 oxygen molecules and greatly increases the oxidization rate of materials. Ozone forms in close proximity to electrical fields due to the breakdown of breathable oxygen or O<sub>2</sub> (Fig. C). Comparatively the atmosphere we breathe is less than 22% oxygen and the remainder of inert gasses such as nitrogen. Inert gasses are those that do not promote oxidization, chemical reactions, or corrosion of materials such as metal electrical terminals and rubber insulators.

Prolonged high voltage leakage can cause the formation of carbon tracking both on the sparkplug porcelain and inside the rubber boot. If the boot is not replaced at the same time as a plug with carbon tracking, the carbon track on the boot will cause a misfire in a short time and render the new spark plug faulty. This condition may be evidenced by a misfire diagnostic trouble code being set, and the malfunction indicator lamp illuminating.

Spark plugs are subjected to repeated heating and cooling and the air within the spark plug well must be vented or the coil on plug would shoot out of the hole. When the engine is first started, hot air expands within the sparkplug well and expels itself through the vent provided in the boot. During operation, it is entirely possible to have combustion chamber pressure blow by the tapered seat, aluminum crush washer, or past the shell and porcelain. These are extremely hot gasses and can cause deterioration of the plug boot. When the engine is allowed to cool, the air in the spark plug well becomes dense, and creates a vacuum sucking in condensation and moisture from the outside air. The next day the moisture is still present upon cold start and can provide unintended paths for the spark to leak, misfires, and eventually carbon tracking with associated conductive paths to ground instead of across the intended sparkplug gap. After the engine heats the trapped air expands and expels some but not all of the condensed moisture through the coil boot vent.

The presence of moisture, high temperature, high voltage, ozone, and corona can wreak havoc on metal connectors, conductors, springs, rubber, etc. Just performing its intended function is strenuous for a coil on plug boot in the best of conditions. Adverse conditions, poor maintenance, an occasional defective spark plug shell crimp and associated manufacture defects in weather proofing can all shorten boot life tremendously. Eliminate come backs and make coil boot replacement a part of your spark plug service.

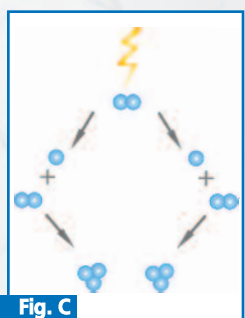


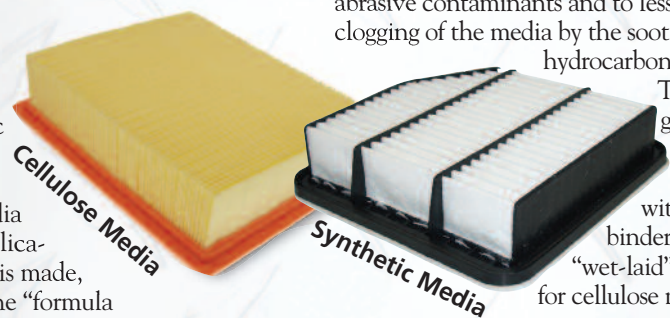
Fig. C

## A LOOK AT FILTER MEDIA

Filter manufacturers continue their efforts to develop media that will meet the demands of today's engines. Filter customers continue to demand products that will provide engine protection during maintenance intervals which continue to increase. It is important to understand that filter media differences can be significant from one filter to the next. An air filter may be the same length and diameter as another filter application, but this doesn't mean that the filter will perform the same and protect your engine as the OE manufacturer has intended. Overviews of the most common media are given below.

### Cellulose-Based Media Overview

Cellulose and cellulose/synthetic fiber blends have proven over time to be the best media value air filter applications. This media is made, with changes in the "formula mix" of fibers and additives, in a wet-laid process similar to other paper technology, hence the moniker "paper filter" to describe this style of media. New technology has allowed the development of cellulose-based media that provides the best combination of life and efficiency in various applications and operating conditions. Fleet test have shown that cellulose-media air filters still have additional capacity and media integrity after 1+ year/12,000+ miles in normal applications. With cellulose-based media filters, vehicle owners



"FIBER BLENDS HAVE PROVEN OVER TIME TO BE THE BEST MEDIA VALUE AIR FILTER APPLICATIONS"

and maintenance managers can achieve their goals of longer maintenance intervals at the lowest cost without sacrificing engine life.

### Non-Woven Synthetic Media

Non-Woven Synthetic Media using materials such as PET, PP, and other synthetic fibers, either alone or in combination with one another was developed to be utilized in small import automotive engines because it has low flow restriction and high dust holding capacity. By sizing the strand widths and shapes during the spinning or extrusion of these fibers, media can be made to attract and hold specific sizes of abrasive contaminants and to lessen the clogging of the media by the soot and other hydrocarbons ingested. This media is generally made using an "air laid" process with some liquid binders versus the "wet-laid" process noted for cellulose media.

This type of synthetic media has a drawback regarding how thin it can be made and still perform as designed. In most cases, the filter is designed to have an injection molded frame that has the media molded to it in an "insert-molded" process. While this insert-molding process is also performed using the thinner cellulose media, it is almost always done with the thicker non-woven synthetic media and these "rigid panel" filters typically have far fewer pleats than can be incorporated using cellulose media.

## PACKAGED QUANTITY CHANGES

**Ignition Coil Boot Quantity Change**  
After listening to our customer's suggestions, OEM has decided to change the packaged boot quantities in our ignition coil boot program. Going forward, all ignition coil boots will be single packed. OEM Part #ICB2 is the only exception and will remain as a 4 boot pack of the popular ICB1 coil boot for Ford V8 and V10 applications. This change will simplify the ordering process, avoiding multiple part numbers depending on boot quantities. Please continue following OEM's On The Move and let us know how we can add more cost effective and time efficient solutions to your business!



**Cabin Air Filter Part # CAF74P changing to CAF74P2, and CAF231P changing to CAF231P2**  
When these cabin air filter part numbers were first released, they were designed to the same specifications as the OE units and packaged one filter per box, just like the OE. Several of our customers have requested that we package our filters two per box, rather than as singles due to the fact that the vehicle application requires two filters. In response to this customer request, we are performing a running change so that going forward these filters will be packaged two per box, as indicated by the last digit of the part number.



## 2011 ENGINE MANAGEMENT & FILTER CATALOG

The 2011 engine management catalog features a complete listing of applications for ignition and engine management. This catalog includes over 200 new part numbers, including the new blower motor resistor line. Apart from the application information, OEM's 2011 engine management catalog also offers a complete interchange reference guide.

The 2011 filter catalog features a complete listing of applications in the categories of oil, air, fuel and cabin air filters. This new catalog offers over 80 new part numbers with extended coverage.

## A unique image reference guide displaying color pictures of the filters

Besides the typical catalog information, OEM has also included new product buyer's guide, filters glossary, most used conversions, oil filter proper drainage instruction sheet, a complete interchange reference guide, and a unique image reference guide displaying color pictures of the filters with part number and description.