FAST FACTS

ELECTRONIC FUEL INJECTION

With strong encouragement and support from Chevy, Dodge, Ford and Toyota, the NASCAR Sprint Cup Series™ has transitioned to Electronic Fuel Injection (EFI) for 2012. Here is all you need to know about EFI and how it will impact the racing this season.

KEY PARTS & PARTNERS

1 Freescale/McLaren Electronic Control Unit (ECU)
The brain of the EFI system receives data from sensors to determine the amount of fuel to inject into the engine and when to fire the spark plugs.

2 Holley EFI throttle body
The only thing passing through the Holley EFI throttle body is air, despite being similar in appearance to a carb. Four air valves are actuated by stainless steel throttle shafts, throttle levers and linkage designed for the extreme NASCAR racing environment.

3 Bosch O2 Sensors
These sensors provide the ECU with key data so the system can adjust the air/fuel ratio to maximize horsepower and engine performance.

4 Other sensors
A network of sensors provide the ECU operating information at a rate of up to 100 times per second.

5 Fuel injectors
Each cylinder has its own injector that precisely sprays Sunoco Green E15 into the engine for ignition.

6 Ignition coils
Eight individual ignition coils send electricity to the spark plugs making distributors obsolete.

7 Spark plugs
Use electricity from the coils to ignite the Sunoco Green E15 and air mixture.

EFI EXPLAINED IN ITS SIMPLEST FORM

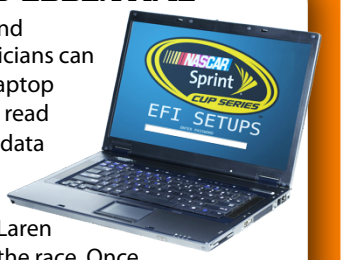
The carburetors on NASCAR Sprint Cup Series engines mixed Sunoco Green E15 and air together to power the engines. Guess what? That's exactly the purpose of EFI. Instead of mixing Sunoco Green E15 and air together at the carburetor, multiple-port EFI efficiently injects fuel into each intake runner and mixes it with the air from the throttle body. A collection of sensors and a Freescale/McLaren Electronic Control Unit (ECU) provide maximum performance and engine efficiency.

"They have felt exactly like, if not better than, the carburetor engines we've been running."
Dale Earnhardt Jr. on NASCAR EFI engines

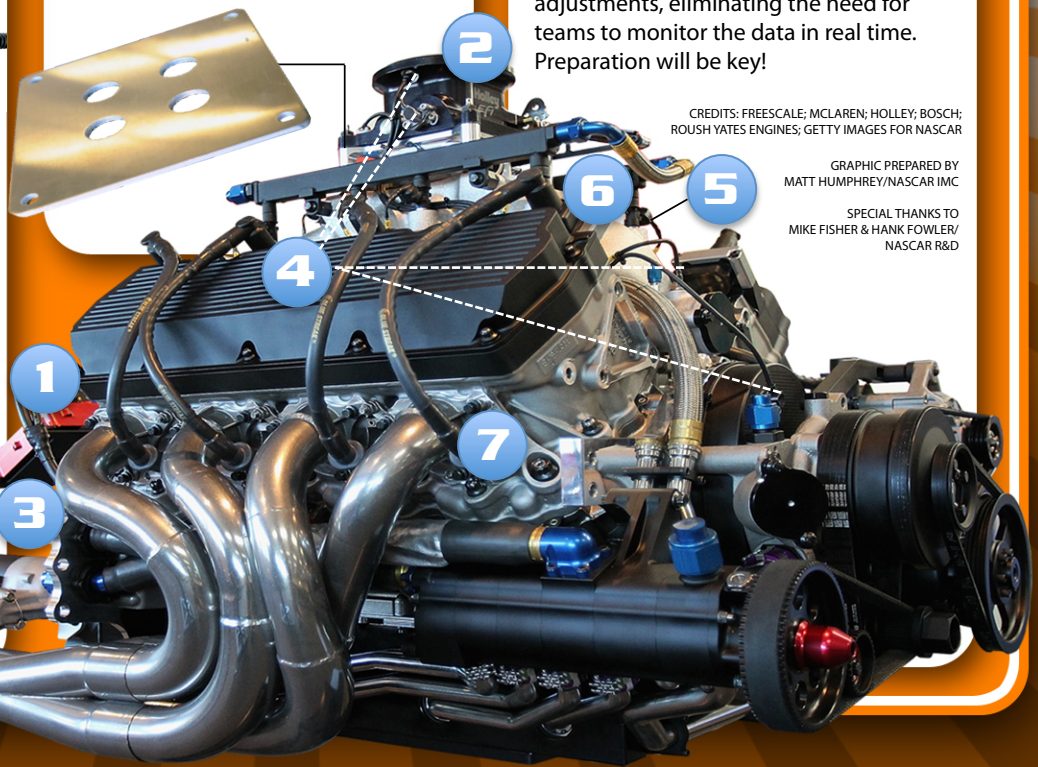
CLEAN YOUR PLATES!

NASCAR will require EFI engines to use a restrictor plate at the sport's two longest and fastest tracks: Talladega Superspeedway and Daytona International Speedway. The plate will be placed beneath the Holley EFI throttle body and limit the amount of air made available to the engine. Unlike carbureted engines, Sunoco Green E15 will not pass through the restrictor plate openings.

SETUP IS ESSENTIAL



Crew chiefs and engine technicians can and will use laptop computers to read performance data provided from the Freescale/McLaren ECU prior to the race. Once the race starts, the fuel injection system technology constantly makes adjustments, eliminating the need for teams to monitor the data in real time. Preparation will be key!



CREDITS: FREESCALE; MCLAREN; HOLLEY; BOSCH; ROUSH YATES ENGINES; GETTY IMAGES FOR NASCAR

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