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FORCE-FEEDING THE HONDA FIT

JACKSON RACING'S SUPERCHARGER KIT

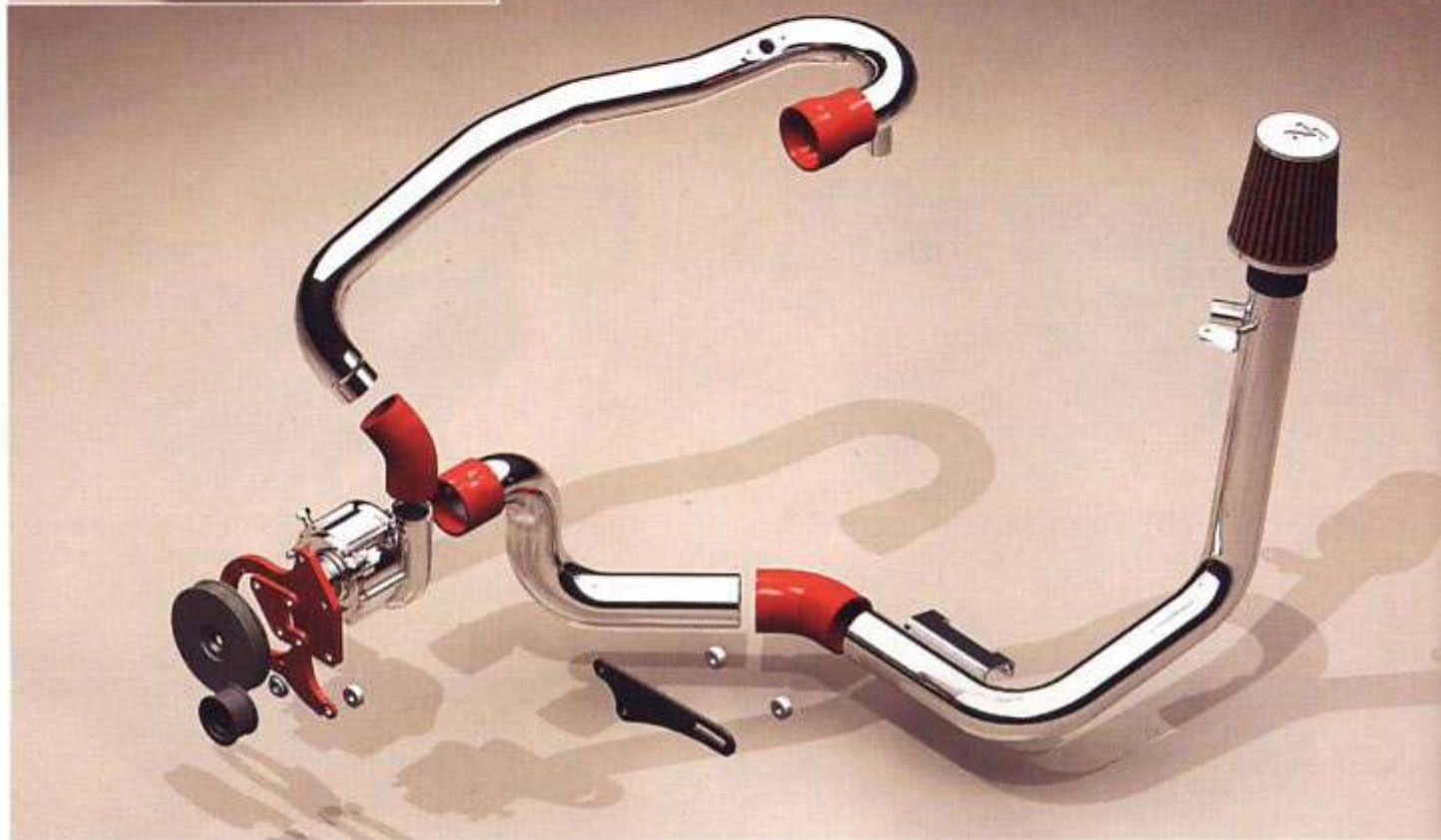


TEXT BY
SCOTT TSUNEISHI

PHOTOS BY
SCOTT TSUNEISHI AND
JACKSON RACING

Car enthusiasts have always embraced the SEMA Show, knowing that they would witness some of the latest and greatest innovations to hit the automotive market. Among the thousands of vendors showcasing their products at the 2006 SEMA show was a company by the name of Jackson Racing. It was 2006 that marked a comeback for Oscar Jackson after a mysterious three-year hiatus. During much of his absence, the aftermarket performance world was left asking, "Where the heck did Jackson go?" We asked the same question and with a friendly smile Jackson calmly said, "I never left the industry, just went on a short vacation."

Whatever reasons behind Jackson's disappearance were easily forgiven at last year's SEMA show as Honda Fit owners caught a glimpse of a new supercharger kit, destined to deliver additional horsepower to their underpowered 1.5-liter engine. Rated at 120 wheel hp at a mod-





est 5lbs of boost, the Honda Fit supercharger kit was designed as a drop-in kit with all necessary hardware and electronics to attribute for a pain-free, yet simple installation. Utilizing a 58mm inlet piping and 50mm outlet charge pipe setup, the Rotrex-powered combination proved to be an ideal system for the Fit as it delivers linear boost characteristics while reducing abuse to driveline components—a major contributing factor among the 1.5-liter engine's longevity. And the best part about the kit? It's CARB legal baby!

WHY A ROTREX SUPERCHARGER?

We asked why Jackson decided on going with a Rotrex supercharger rather than the traditional Eaton type unit that's been used in previous supercharger kits sold by JR. He replied by saying, "Jackson Racing has gained a vast amount of knowledge working with various vehicles and supercharger units over the years. The Eaton (Roots-type) supercharger is a good unit, and we have been successful with it for the past 15 years. But in those 15 years, we have seen where the Eaton has been limited. The Rotrex

01. The Rotrex C15-60 supercharger on the Honda Fit is about 125 mm x 130 mm x 185 mm in size, which is great for tight fitments. It is the smallest Rotrex, and is capable of producing up to 200 HP in some applications. The inlet and outlet diameters are 60mm and 45 mm, respectively.

02. Rated at 120 wheel hp at 5lbs of boost, the Honda Fit CARB-legal supercharger kit was designed as a drop-in unit with all the necessary hardware and electronics.

03. This supercharger also uses its own Rotrex oil, so there is no need to tap into the oil pan or the factory engine oiling system. The oil reservoir was designed to improve heat transfer, relax oil flow, and eliminate oil foaming.

04. The black box controls fuel injector pulse width and the MAP sensor clamping. The small box (yet to be named), offers safety within the supercharger kit as it stretches the pulse width of the stock 180cc injectors.

05. The small and compact sizing of the Rotrex C15-60 supercharger is shown towards the rear of the firewall, just adjacent to the header.

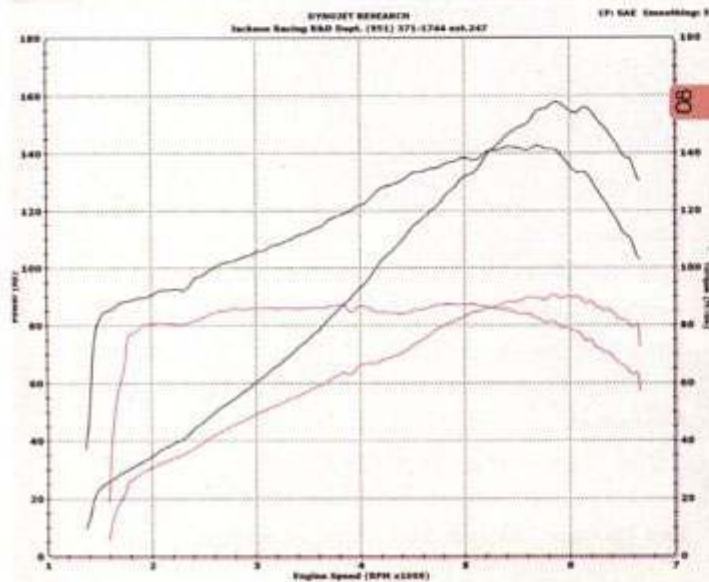
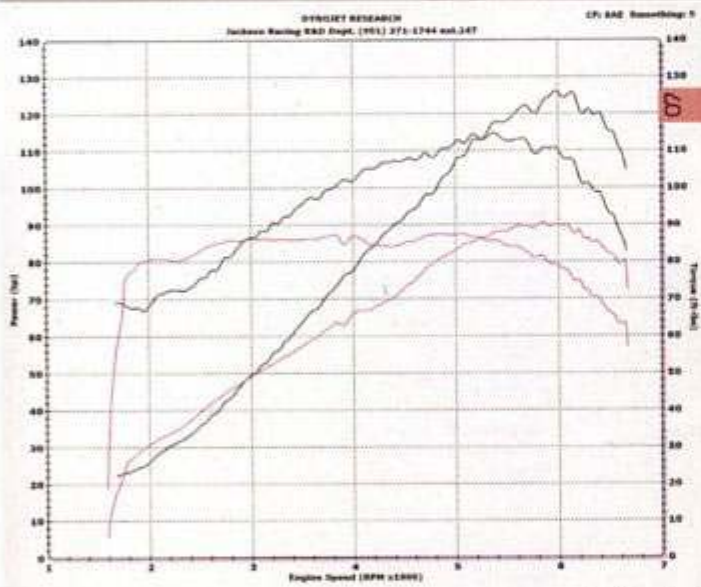


supercharger, on the other hand, has no limitations and the possibilities are endless. We have been watching this supercharger go through development for six years now, and the end product is fantastic." Further discussions with Jackson revealed the Rotrex superchargers sold with the Honda Fit kit promises to combine the best of supercharging and turbocharging mixed into one.

Using a C15-60 centrifugal supercharger, the Rotrex is ideal for engines up to 2 liters and is capable of producing up to 200 hp in some applications. The Rotrex unit is a belt-driven centrifugal supercharger that utilizes



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fixed-ratio planetary rollers to increase the efficiency and reliability of the system. The small and compact supercharger size allows vehicles like the Honda Fit, known to have a tight engine bay cabin, to easily accept this supercharger. Capable of turning close to 200,000 RPM (max impeller speed), the Rotrex supercharger can obtain the optimum power range quickly. Most centrifugals, like the roots and twin-screw type, are known to spin at lower rpms and cannot replicate the speed of the Rotrex system. Using technology similar to a turbo, the Rotrex uses an actual turbo compressor. This hybrid concept helps the Rotrex to create incredible efficiency without the drawbacks of a standard turbocharger, which draws large amount of power-robbing heat since it is driven by exhaust gasses. Jackson states the Rotrex supercharger is 96 percent efficient and delivers the outstanding throttle response of the Roots supercharger with the compressor efficiency of a turbo—without lag and power that never quits until the rev limiter.

Tired of that high pitched whining noise coming from your supercharger with every step of the accelerator? The Rotrex supercharger uses a patented Traction Drive that allows it to be whisper quiet and nearly undetectable by the naked ear. Perhaps the only thing that would give indication that your Honda Fit is indeed breathing horsepower under the hood is the "whoosh" of the Bosch bypass valve with every shift you make. Jackson Racing seemed to have covered all bases as they also include a simple, yet effective black box which controls engine management parameters, including fuel injector pulse width and the MAP sensor clamping to safeguard your engine. The small box, which has yet to be named, stretches the pulse width of the stock 180cc injectors, which can still be used with the supercharger kit.

Obsessed with more speed and more power? JR is one step ahead of the game as they offer an optional 10lb upgrade for those looking to upgrade their 5 lb kit. CARB restrictions currently allow the 5lb kit to produce 120whp as of print, but dyno tests on the preliminary kit before CARB approval show a gain of 35.49hp and 27.26 lb-ft of torque over a factory Fit baseline



run. The 10lb upgrade kit with an additional bolt-on JR catback exhaust was definitely a sight to see as the newly outfitted 1.5-liter delivered 157.8 wheel hp and 142.6 lb-ft of torque. The 10lb kit improved baseline horsepower from 90.64 hp and 87.51 lb-ft of torque to 157.8 hp and 142.6 lb-ft of torque—an improvement of 67.16 hp and 55.09 lb-ft of torque over baseline. The 10lb upgrade kit will feature all the necessary hardware and software to get the consumer back out on the road in no time. Keep in mind the 5lb kit is marketed as the only supercharger kit under CARB approval, but honestly, after looking over both setups side by side, we couldn't tell the difference, so how would the cops?

Just how confident are these guys with their supercharger kit? The Jackson Racing supercharger kit will carry a 2-year limited warranty. So what are you waiting for, Honda Fit owners? Your prayers for street-legal horsepower have just been answered.

SOURCES

JACKSON RACING
JACKSONRACING.COM

06. For those looking for more horsepower, the 10lb kit is still currently under development and we learned R&D has been conducted on the Jackson Racing project Fit using both the RC Engineering 270cc and the RC Engineering 310cc injectors.

07. Preliminary dyno data taken before CARB approval reveals the 5lb supercharger kit to produce 126.13 hp and 114.77 lb-ft of torque—a gain of 35.49 hp and 27.26 lb-ft of torque over the factory Fit's baseline numbers. Jackson claims the CARB-approved supercharger kits will be rated at 120hp.

08. The 10lb upgrade kit with JR catback exhaust delivered 157.8 wheel hp and 142.6 lb-ft of torque. The 10lb kit improved baseline horsepower from 90.64 hp and 87.51 lb-ft of torque to 157.8 hp and 142.6 lb-ft of torque—an improvement of 67.16 hp and 55.09 lb-ft of torque over baseline. The 10lb upgrade kit will feature all the necessary hardware and software to get the consumer back out on the road in no time.

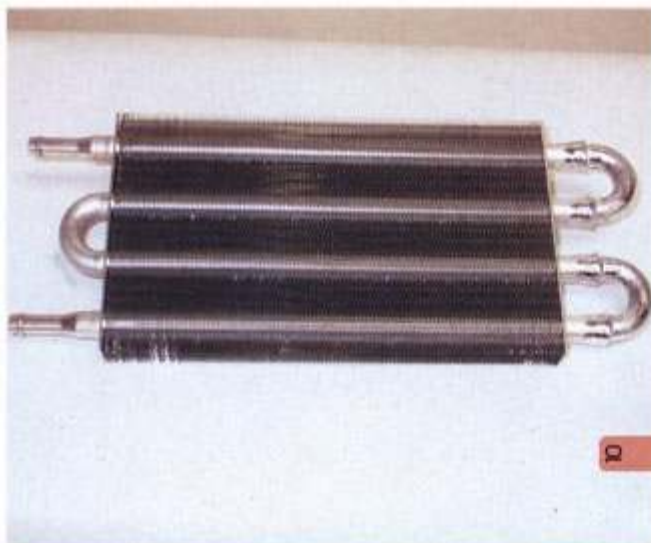
09. Shown above is a Bosch bypass valve, included within the kit.

10. A Jackson Racing oil cooler for the Rotrex oil is included with each supercharger kit. An engine oil cooler is not provided with the kit.

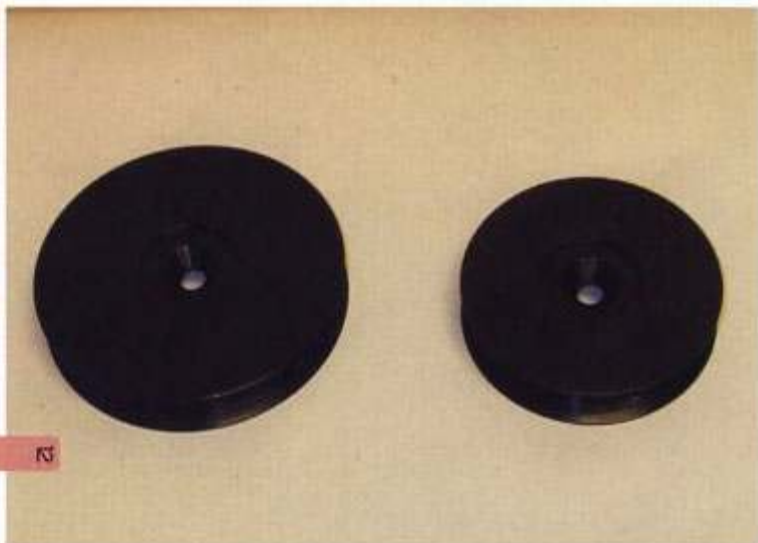
11. JR supercharger brackets are red anodized CNC billet aluminum.

12. On the left is the 5lb pulley while the smaller pulley on the right brings boost levels to 10lbs.

13. Here's a CAD design of the soon-to-be-released Fit header. Jackson Racing has two headers currently in the works, with plans to release the JR CARB-pending steel header in a ceramic coated design that retains the use of the catalytic converter. This header contains larger tubing, along with a high flow collector for more horsepower. The Jackson Racing race header is based off of a 4-2-1 design. The tubing sizes have not been finalized as of this writing as JR continues their dyno testing and R&D.



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