



PART 4

PROJECT XFR+ ENGINE AND SUSPENSION UPGRADES

WE ENLISTED THE EXPERTISE OF GSR AUTOSPORT TO TRANSFORM OUR JAGUAR XFR INTO AN EVEN MORE MENACING MACHINE

WORDS / *Alex Bernstein*

PHOTOS / *Steven Brooks, David Aubuchon, Greg Emmerson, Ezekiel Wheeler*

HAVING RECEIVED ITS EXTERIOR ENHANCEMENTS FROM VORSTEINER (FEATURED LAST MONTH, EC 12/13), OUR 2012 JAGUAR XFR LOOKED EXTREMELY PURPOSEFUL.

And while its factory performance was nothing to sneeze at, our good friends at GSR Autosport knew exactly how to make our Jag not only talk the talk, but walk the walk.

GSR laid out a build plan for Project XFR+ with Formula D driver and company co-owner, Michael Essa, appraising the stock car to form definite ideas about what needed changing or enhancing.

"Driving the car completely stock, it felt rather heavy. It was more-luxury than the sports cars I'm used to," Michael explained. It essentially came down to the handling of the 5224 lb sedan. "Turn-in was slow and the car felt soft; it was like a yacht in the canyons and at Willow Springs Raceway," he smiled.

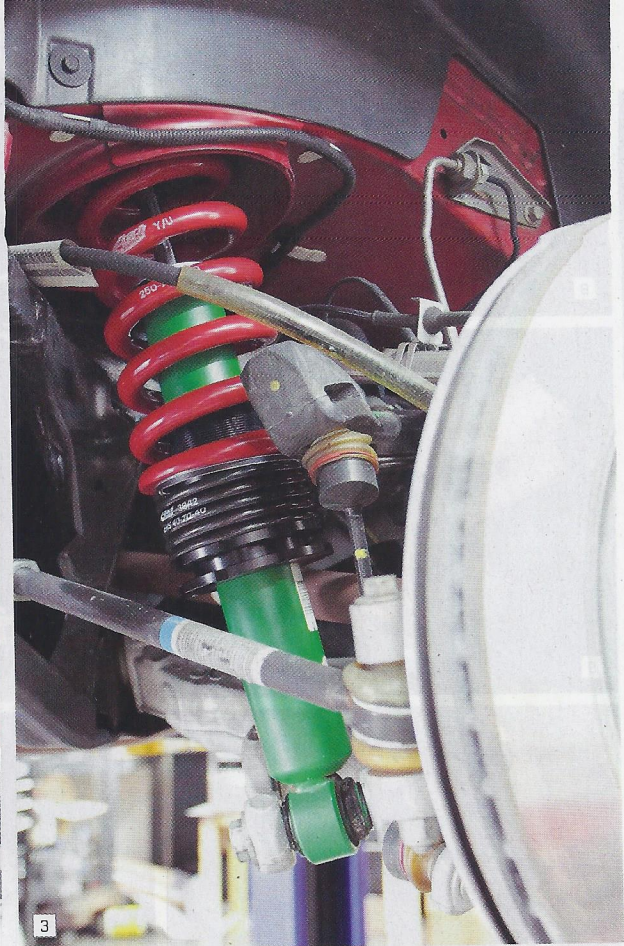
With this in mind, Michael and the GSR crew decided that suspension modifications

were the first priority. Originally, the plan was to pull the factory struts and replace them with a coilover system. This is often the best plan of attack, but it would have negated the XFR's brilliant Adaptive Dynamics system.

Upon further inspection, it turned out the adaptive system was built around Bilstein shocks. And since GSR runs Bilstein components in its racecars, they worked closely with the company to modify the factory units in order to retain the Adaptive Dynamics.

Rather than simply fit lower, stiffer springs, GSR sourced sleeves for the factory dampers that would allow a height adjustable system. This meant they could set the ride height correctly and specify the exact spring poundage they required.

A set of Eibach coil springs was installed using Bilstein's recommended rates. This then allowed the car to be lowered substantially, dropping the center of gravity and, of course, creating a stance to complement the 21" Vorsteiner VS-190 wheels and low-profile Nitto Invo tires we were fitting.



"After the suspension mods, the XFR really woke up. It started to feel more nimble; like a proper driver's car," Michael recalled. "Before the upgrade, I couldn't really tell if the car was in oversteer, understeer or a four-wheel drift, but afterwards it gave much more feedback and responded to your inputs immediately," he continued.

"The only other aspect of the chassis we considered was the braking, but the XFR actually has really good brakes," Michael concluded. In fact, if you refer back to our comparison test with the BMW M5 (E61/13), you see that it was easily as good as the Bavarian sedan.



+ 5.0V8

With the chassis sorted, it was time to squeeze more power from the supercharged 5.0-liter V8.

But first we wanted to get an idea of its bone-stock numbers. Strapped to the dyno at

Superior Automotive Engineering in Placentia, CA, the XFR put down 453hp to the rear wheels and 402 lb-ft of torque. These are great figures and explain why the car is so well loved by people who've driven them.

Of course, GSR wasn't going

to leave it alone, and started to investigate power adders. One of the first additions was a smaller supercharger pulley from Mina Gallery.

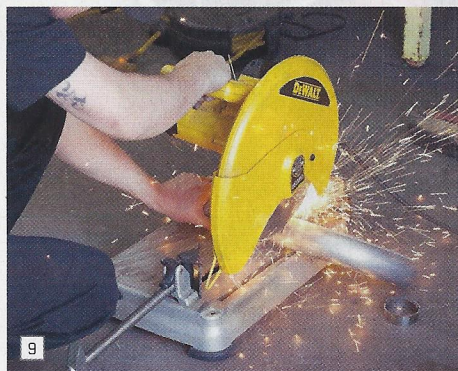
Removing the stock pulley was a tricky job since it's a press-fit but once fitted, the new pulley provided an extra 1.5psi of boost, which was good for an estimated 17-25hp at the wheels. "I think if we recalibrated the ECU for the added boost, we'd feel a bigger gain, but we decided to let the stock ECU cope with the fueling demands and there was definitely more power at the lower end and in the mid-range," Michael explained. Again, the Jag held its own against the M5 in our test and



[1], [2], [3] GSR opted to retain the stock adaptive dampers but used adjustable perches and stiffer Eibach springs to improve the handling and alter the ride height

[4] Smaller supercharger pulley would increase boost pressure, adding power and torque throughout the rev range

[5], [6], [7] Cold-air intake system was prototyped but eventually rejected through lack of time and high under-hood temps



more, the range of aftermarket parts now gives enthusiasts the opportunity to customize their own cars.

"It's now a great daily driver for an enthusiast," Michael said. "It's a good car from the factory, but I feel we've enhanced the key areas, improving its prowess while injecting some adrenaline the XFR deserved."

▶ NEXT MONTH We'll look at the final element of the build – vinyl wrapping with Daley Visual

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- gsrautosport.com
- vorsteiner.com
- minagallery.com
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[8] This collection of tubes, mufflers and tip would eventually become GSR's custom exhaust system [9], [10], [11], [12] It took several days to prototype the stainless steel exhaust but the finished product, which is now available to customers, produces a rich, addictive sound. On the project car, the tailpipes were also powdercoated grey to match the wheels

was certainly on par with power delivery.

The increased boost needed less restrictive airflow so GSR prototyped a dual-cone intake system for the XFR. During testing they discovered that the high temperatures inside the engine bay meant this system wasn't efficient and actually lost power. The intake was scrapped but the team is convinced that with more time it would be possible to develop the system and provide more cold air to the engine. However, the factory intake isn't a big restriction, so the team was happy to use it.

If you know anything about Jaguar's R models, they sound amazing. It's not quite as good as a Mercedes-Benz C63, but it'll bring a smile to your face regardless. However, it lacked the punch our project car needed so GSR studied the stock exhaust system. They found it really wasn't restricting the motor but was muffling it, so they decided to fabricate a simple axle-back system to open the pipes and give the V8 its voice.

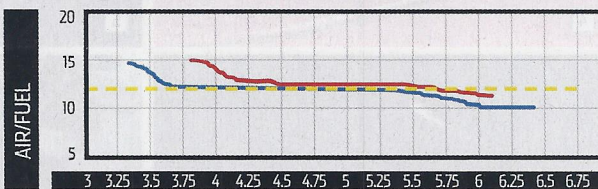
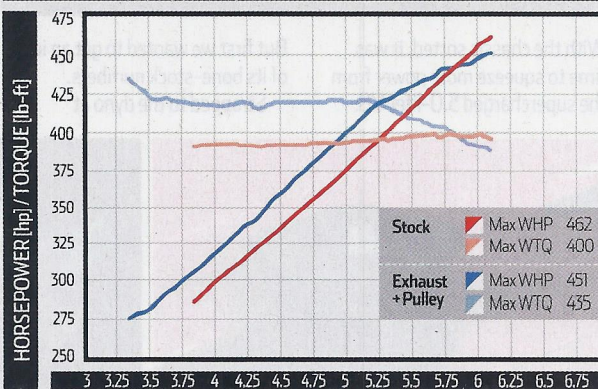
Removing the stock mufflers, the shop replaced them with small mufflers and open pipe. It was finished with four slash-cut, thin-walled tips that looked more intimidating from behind. These tips were subtly powdercoated grey to mimic the color of the Vorsteiner wheels and vinyl-wrapped chrome executed by Daley Visual (more details next month).

With the addition of the supercharger pulley and custom axle-back exhaust, GSR returned to the dyno to measure the gains. With a best run of 451hp, we were pleasantly surprised, especially by the mid-range torque increase.

Total gains were in the region of 25hp and 33 lb-ft of torque in the curve. The horsepower numbers were a bit less than Mina Gallery suggested but this type of discrepancy isn't uncommon on the dyno.

Overall, our XFR definitely deserved the "+" we added to its name. It's become so much more than the stock car and much closer to the factory XFR-S. What's

2012 JAGUAR XFR DYNO TEST



ENGINE SPEED [rpm] (x 1000)

NOTE: The pulley and exhaust produced gains across the rev range but tailed off at high RPM, possibly due to lack of fuel from the stock software and injectors, plus hotter weather after the stock dyno run