



**AEM-21-8316DS Brute Force Air Intake w/Dryflow™ Filter**  
**2012-13 Jeep Wrangler JK 3.6L V-6**  
**Engineering R&D Summary**

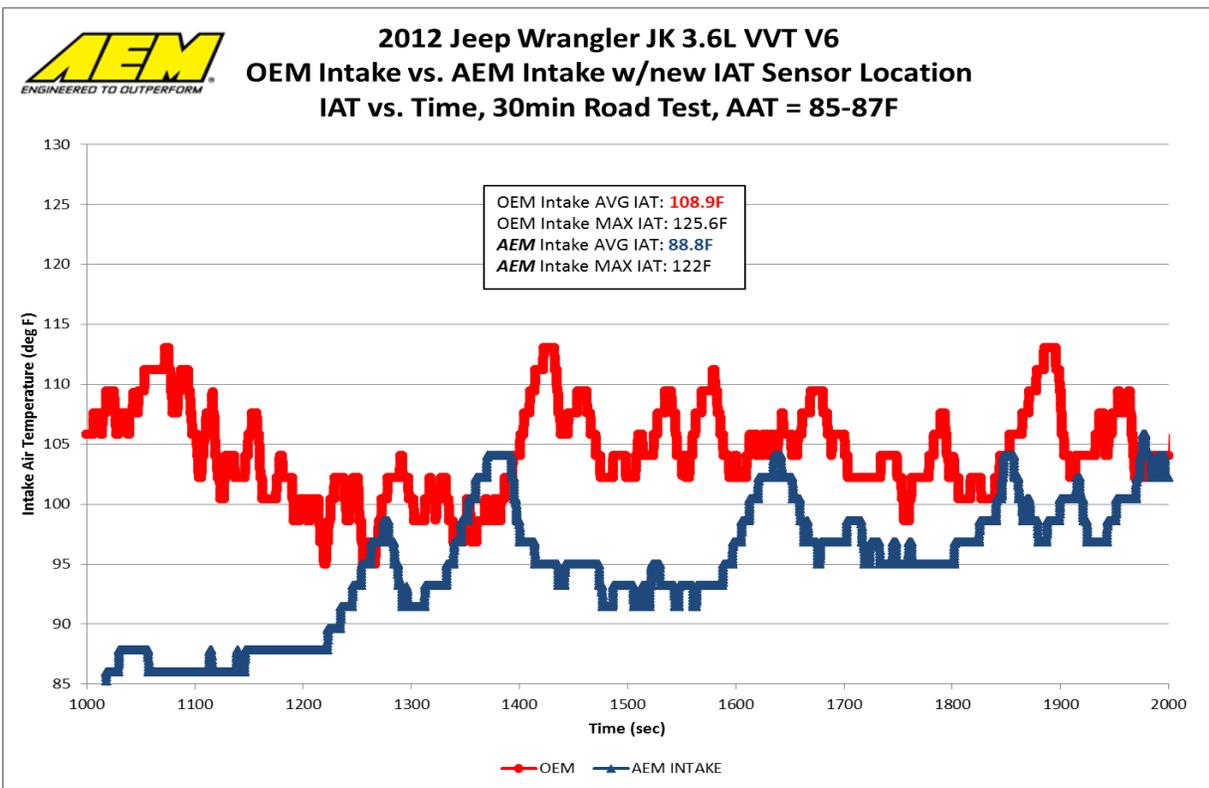
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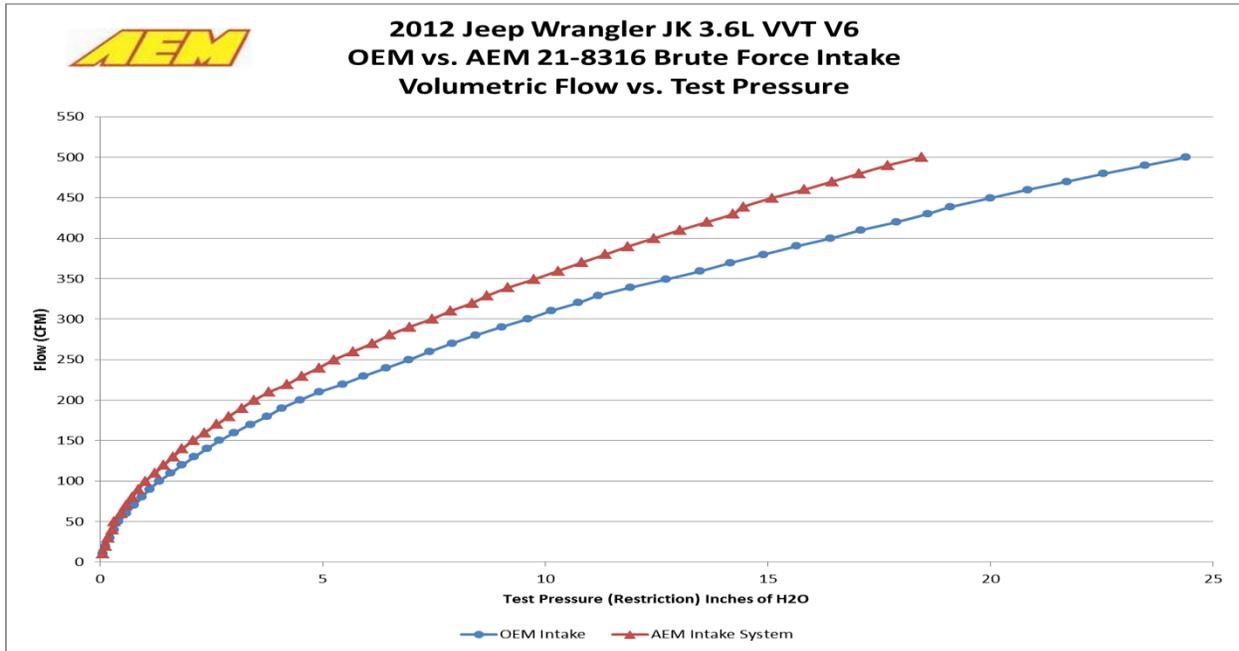
Testing the AEM-21-8316DS Brute Force intake system to ensure mounting points are rugged for Jeep use, or just having fun at the “office”.

A little known secret at AEM® Induction Systems is that one of our most popular products isn't for a sport compact car, or even for any sports car. It's our cold air intake for the Jeep Wrangler 4x4. We just can't seem to make enough of them. So when Jeep updated the 2012 Wrangler JK with their new world-class 3.6L VVT V-6, we used the opportunity to design an intake system that would exceed the demands of even the most hardcore Jeep off-road enthusiasts, yet be easy enough to maintain for everyday driving. Like all of our new intake systems, AEM's 21-8316DS Cold Air Intake features our high-performance DRYFLOW™ Air Filter, a washable and reusable synthetic media filter that allows more flow than the stock filter. And unlike other high-performance filters it doesn't require any filter oil, making it easy to maintain. The intake also features a new sealed airbox design that not only protects your DRYFLOW synthetic air filter during the most severe off-road driving, it's also compatible with the various snorkel systems already available for the 2012 Jeep Wrangler JK. That means you can drive your Jeep Wrangler through any terrain wet or dry with the peace of mind that your engine is protected from the elements. The 21-8316DS Cold Air Intake also features AEM's Filter Minder® Gauge, allowing you to easily monitor the status of your DRYFLOW™ filter. When the needle on the gauge marks in the red zone, it's time to wash your filter, re-install it, and go. As part of our R&D testing road and dyno testing, AEM's engineers mounted several temperature probes on the intake system and found that the Jeep Wrangler's factory IAT (Intake Air Temperature) sensor was absorbing heat from other engine components under the hood. As a result, the IAT sensor was reporting

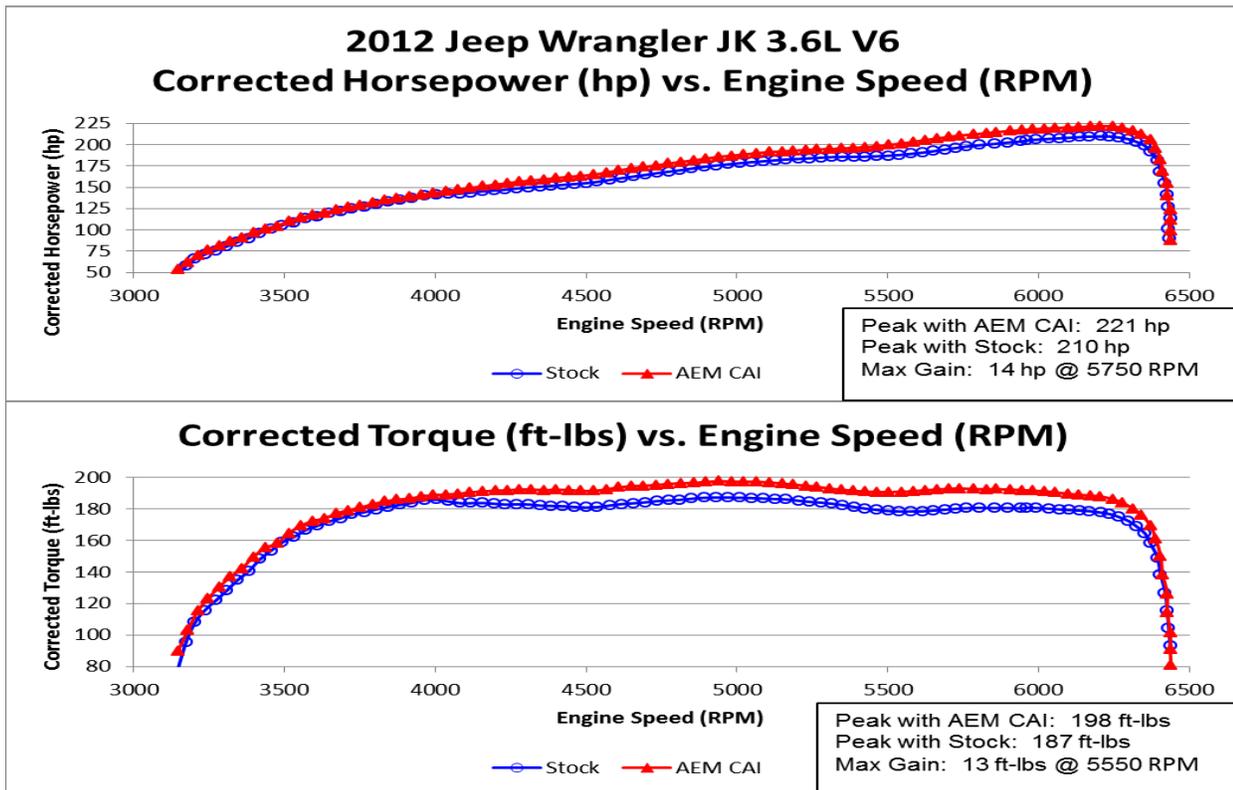
temperatures up to 20°F hotter than the actual air temperature recorded by our probes mounted inside the intake tube near the throttle body. Our AEM composite intake tube was designed to insulate the incoming air and to relocate the IAT sensor—still near the throttle body, but further away from the engine and alternator—to keep the sensor cooler. This allowed the sensor to report intake air temperatures more accurately, allowing the ECU to optimize spark advance to maximize power and fuel economy.



The AEM 21-8316DS intake system provides significantly improved flow over the OEM system. We tested both on our Superflow flow bench as complete systems. The AEM intake system retains the OEM inlet so that the water intrusion characteristics of the Jeep remain as designed by the factory. This feature also allows those that want to install one of the many snorkel kits available in the aftermarket directly onto the AEM intake box. The greatly improved flow is further realized when a free flowing exhaust is installed.



The extensive temperature tests, flow tests, and fuel trim tests to ensure the engine receives the correct air/fuel mixture resulted in averaged gains of 14HP and 13 ft.-lbs. torque over the stock intake system with the AEM 21-8316DS intake installed, with higher gains available in 2WD.



**Run Title: Stock 2012 Jeep Wrangler JK 3.6L V6**  
**Run Notes: Average baseline runs. 4239 miles. 2<sup>nd</sup> gear runs, 4WD**  
**Run Date: 9/27/12**  
**Stock: 80 °F, 29.97 in-Hg, SAE: 0.998, Relative Humidity: 59 %**

**Run Title: AEM 2012 Jeep Wrangler JK 3.6L V6**  
**Run Notes: Average AEM intake kit installed runs. 4239 miles. 2<sup>nd</sup> gear runs, 4WD**  
**Run Date: 9/27/12**  
**AEM: 84 °F, 29.97 in-Hg, SAE: 1.000, Relative Humidity: 52 %**  
 Filter and vehicle specific data shown, results may vary for other models.  
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AEM-21-8316DS Brute Force Intake System Installed.