



AEM 21-724C Intake System w/Dryflow™ Filter

2013 Hyundai Veloster

Engineering R&D Summary



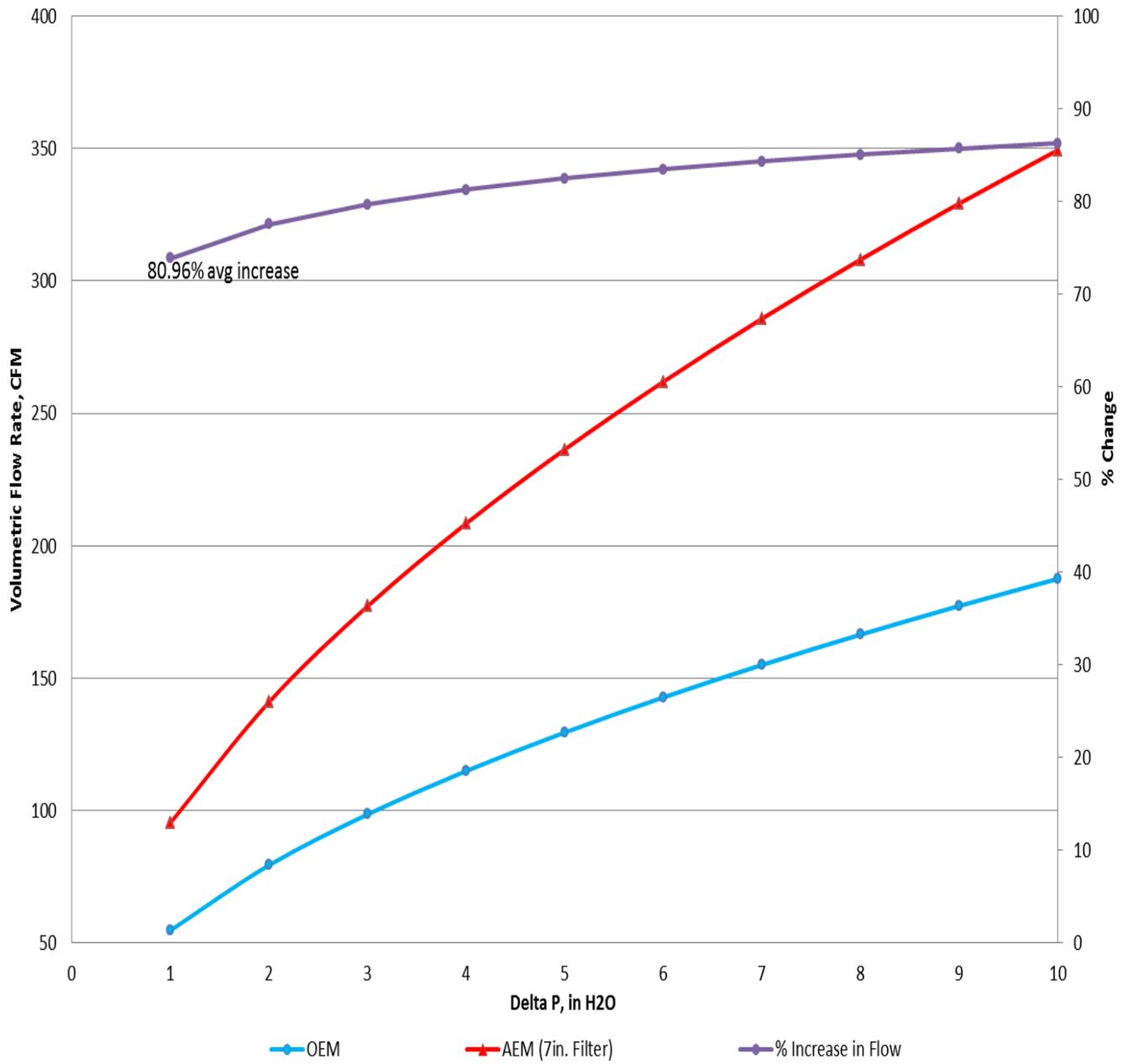
The new 2013 Hyundai Veloster Turbo is rated at 201 hp and 195 ft-lbs of torque, a huge increase in power over its naturally aspirated counterpart initially released in the summer of 2012. The twin-scroll turbo 1.6L engine setup utilizes a speed density based intake system to retrieve ambient air. The panel filter airbox system breathes through two in-line resonator chambers, one tucked down inside the driver's side wheel well, the second is located behind the turbo intercooler, and finally an air scoop looping back up in front of the airbox in an attempt to retrieve cool air from the front fascia. The location posed a limitation on intake pipe diameter.

As a result, two prototype configurations included the reuse of the stock rubber intake tube combined with a 3 inch lower aluminum tube, heat shield configurations, and also multiple aluminum tube diameter combinations. Four prototype cold air intakes were designed, fabricated, and dyno tested to determine which would provide the largest power gains. Ultimately, the highest gains were produced from a two piece 2 ¾ inch aluminum intake tube design which routed a 7inch cone filter down low near the front bumper fog light. Additional flow bench testing of this prototype configuration in comparison to stock revealed an average increase in flow of 80.96% over the OEM intake system. The final result yielded its largest average power gains observed at 5700rpm with 16hp and 14ft-lbs of torque for the AEM cold air system on our mustang dyno. Custom brackets were then designed and paired with 6mm rubber mounts to provide the necessary support for optimal clearance as observed during final engine rock testing with the AEM cold air system installed.

The AEM 21-724 intake system comes in AEM Gunmetal Gray and in a vacuum metalized chrome look. This system also features the AEM Dryflow filter that never needs oil and provides amazing filtration efficiency. The kit includes high quality couplers, hose clamps, and soft mounts for durability that will last the life of the car. The moment you drive the car after installation of the AEM intake system you will feel the power in the seat of your pants.

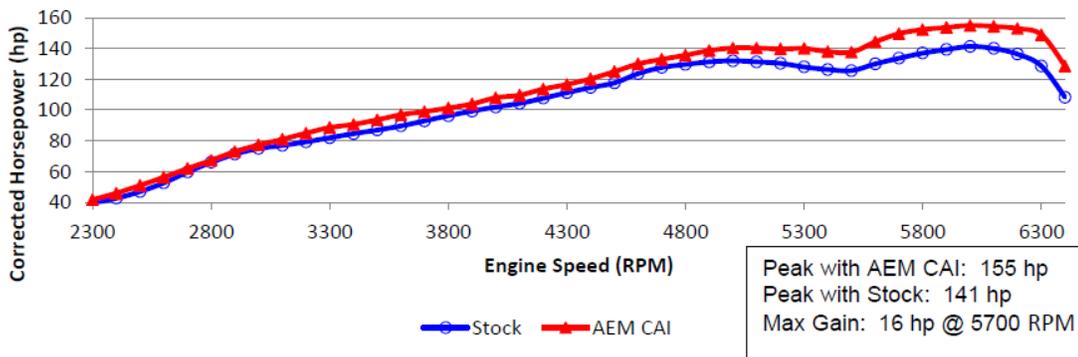


Flow vs. Pressure

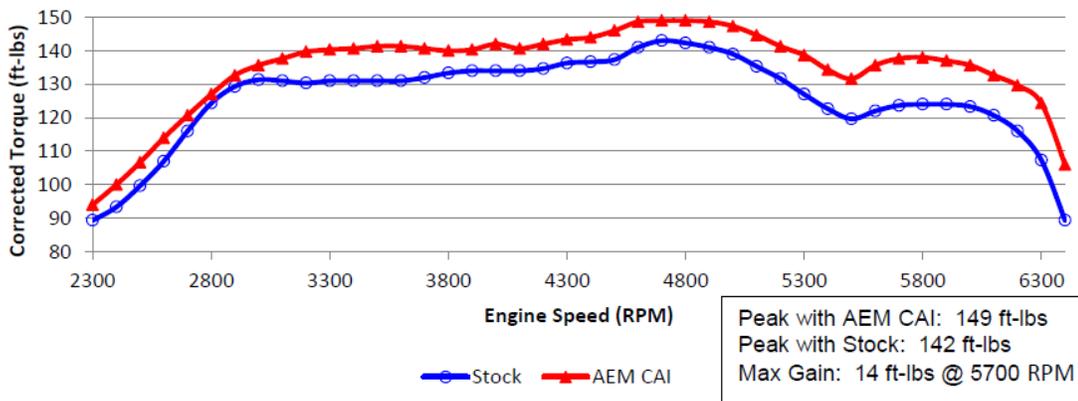




2013 Hyundai Veloster Turbo 1.6L Corrected Horsepower (hp) vs. Engine Speed (RPM)



Corrected Torque (ft-lbs) vs. Engine Speed (RPM)



Run Title: Stock 2013 Hyundai Veloster Turbo 1.6L
Run Notes: Average baseline runs. 1250 miles. 3rd gear runs
Run Date: 12/19/12
Stock: 56 °F, 30.1 in-Hg, SAE: 0.95, Relative Humidity: 21 %

Run Title: AEM 2013 Hyundai Veloster Turbo 1.6L
Run Notes: Average AEM intake kit installed runs. 1250 miles. 3rd gear runs
Run Date: 12/19/12
AEM: 59 °F, 30.1 in-Hg, SAE: 0.95, Relative Humidity: 19 %

Filter and vehicle specific data shown, results may vary for other models.
 AEM 21-724

