

2014 Cadillac Vsport's Twin-Turbo Engine Essentially Kicks 'Turbo Lag' to the Curb

Turbocharging increases power and performance with efficiency, but the delay in the delivery of power – known as “turbo lag” – has historically been its key limitation.

Cadillac's about to change all that.

“By creating a very short path from the turbos to the throttle body, the compressors are able to draw air directly from the inlet box and send pressurized air through the intercooler immediately,” said Richard Bartlett, Cadillac assistant chief engineer for the 3.6L engine. “This gives the driver a more immediate feeling of power on demand.”

Cadillac's first-ever Twin-Turbo, available on the 2014 CTS Vsport midsize luxury sedan and XTS Vsport full-size luxury sedan in the U.S. this fall, kicks turbo lag to the curb with a unique combination of smaller turbochargers, top-mounted throttle body and shorter air pathways.

The Cadillac Twin-Turbo V6's patented air flow design, which eliminates circuitous heat-exchanger tubing, makes the most

of engine packaging efficiency to improve torque response time over other air flow designs, Bartlett said.

Rated at 420 horsepower in the all-new 2014 CTS Vsport and paired with Cadillac's first eight-speed transmission, the Twin-Turbo is one of the most power-dense engines in the midsize luxury sedan segment, rated at an SAE-certified 420 horsepower and 430 lb.-ft. of torque.

Air flow routing volume is reduced by more than 60 percent when compared with a conventional design that features a chassis-mounted heat exchanger. The water-to-air cooler system achieves more than 80 percent cooling efficiency with only about 1 psi flow restriction at peak power for fast torque production.

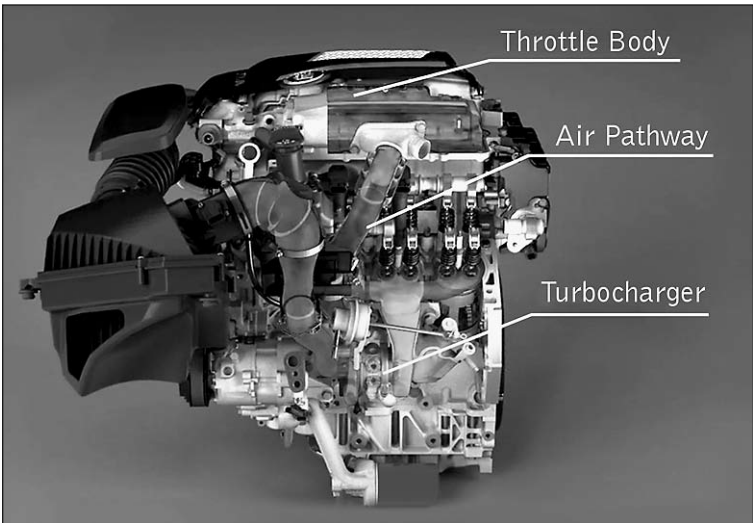
Using two smaller turbochargers rather than a single, larger turbo also helps ensure immediate performance because smaller turbochargers spool up quicker to generate horsepower-building air pressure that is fed into the engine, Bartlett said. An integrated charge air cooling system also

contributes because the compressors blow through very short pipes up to the intercooler.

The single, centrally located throttle body atop the engine controls the air charge from a pair of turbochargers after the temperature is reduced in the intercooler.

This design fosters more immediate torque response and reduces complexity by eliminating the need for a pair of throttle bodies.

Together, smaller turbochargers, top-mounted throttle body and shorter air pathways help sustain peak torque over a broad range – 1,900 to 5,600 rpm – for a confident feeling of power in almost all driving conditions, such



Cadillac has new designs to reduce “turbo lag” in the new XTS.

as accelerating or overtaking traffic on the highway.

“The Cadillac Twin-Turbo intercooler design builds on our experience with the 6.2L super-

charged engine used on the current CTS-V Series,” Bartlett said. “That means more performance for drivers without sacrificing efficiency.”



Chevrolet Volt



Chevrolet Sonic



Chevrolet Avalanche



Buick Encore

Chevrolet Earns High Marks in Study Of Owners After 90 Days of Driving

For a second year in a row, Chevrolet has three segment award recipients – more than any other brand – in the 2013 J.D. Power Automotive Performance, Execution and Layout (APEAL) Study.

The Chevrolet Volt ranks highest in its segment three years in a row. Sonic and Avalanche both received awards for the second consecutive time.

“We are driven by the positive recognition from our customers on the things they love about our vehicles,” said Alicia Boler-Davis, senior vice president, Global Quality and Global Customer Experience.

“This is a key measure of how successful we are at exciting and delighting our customers.”

With the Buick Encore ranking highest in its segment in its launch year, GM received four segment awards. In addition to the award recipients, seven

other General Motors' models placed in the top three of their respective segments, Boler-Davis said.

The APEAL Study is based on more than 83,000 responses on how gratifying a new vehicle is to own and drive in the first 90 days of ownership.

The APEAL study complements the J.D. Power Initial Quality Study.

GM had two vehicles that ranked highest in their segment in both studies – the newly launched Buick Encore and Chevrolet Avalanche.

APEAL Study GM Segment Award Recipients:

- Chevrolet Volt – Compact Car;
- Chevrolet Sonic – Sub-Compact Car;
- Chevrolet Avalanche – Large Light Duty Pickup;
- Buick Encore – Sub-Compact CUV.

Cruze Diesel: Power With Lower Emissions

Using diesel technology doesn't mean a loss of engine power, according to a Chevy engineer.

The 2014 Chevrolet Cruze Clean Turbo Diesel's advanced 2.0L engine uses a variable-swirl intake system to create a “perfect storm” of air and fuel that helps enhance performance while reducing emissions.

“Variable swirl helps put the ‘clean’ in Cruze Clean Turbo Diesel,” said Mike Siegrist, 2.0L turbo diesel assistant chief engineer. “It increases the mixture-motion of air and fuel in low-speed, low-load driving, like when you're doing the commuter crawl to work every day.

“It contributes to Cruze Diesel's great fuel economy, and helps give drivers the most torque for the least amount of fuel at the lowest emission and noise levels.”

In Cruze's variable-swirl intake manifold, each cylinder has two separate intake ports, with one of them controlled by a valve.

During variable swirl, each throttle valve varies how much it opens to create mixture-motion of air and fuel within each cylinder.

General Motors' Powertrain team devoted countless hours to calibrating the actuator to precisely open and close the valves for optimal performance.

As a result of this and other advanced powertrain technologies, Cruze's clean diesel engine offers a segment-leading EPA-estimated 46 mpg highway and range of more than 700 miles per tank – better than any non-hybrid or gasoline-powered passenger car vehicle in America, Siegrist said.

He added that Cruze's diesel engine, married to an automatic transmission, provides greater

fuel economy than a comparably sized gasoline engine through greater thermal efficiency, a higher compression ratio and an unthrottled combustion process.

Cruze's diesel engine also is the cleanest ever produced by GM, Siegrist said. In general, clean diesels generate at least 90 percent less Nitrogen Oxide (NOx) and particulate emissions when compared with previous-generation diesels.

Cruze Clean Turbo Diesel's emissions will meet U.S. Environmental Protection Agency's (EPA) stringent Tier II Bin 5 emissions standards, according to GM officials.

“All combustion engines have swirl, but having variable swirl is a real difference maker for Cruze's diesel engine,” Siegrist said. “Ultimately, it means more driving satisfaction with less environmental impact.”



PRESTIGE Cadillac
FORMERLY RINKE CADILLAC



PURCHASE FOR:

0% APR

FOR 60 MONTHS
FOR QUALIFIED BUYERS
ON ALL 2013 CADILLAC MODELS

**RECEIVE \$1,000 LUXURY LEASE
CONQUEST INCENTIVE OR
\$1,000 GM LEASE LOYALTY INCENTIVE FOR
ALL MODELS.***

OR LEASE FOR:

2013 XTS

\$349* PER MONTH
ON A 36-MONTH LEASE 10,000 MILES PER YEAR

\$1,450 DOWN • MSRP \$44,995
TAX, TITLE, LICENSE AND DEALER FEES EXTRA.
MILEAGE CHARGE OF .25¢ PER MILE OVER 30,000 MILES.

ATTRACTIVE LEASE OFFERS NOW AVAILABLE
WITH CADILLAC PREMIUM CARE MAINTANCE FOR 4 YEARS OR 50,000 MILES*

<div>2013 ATS 2.5</div> <div></div> <div>\$229* PER MONTH ON A 36-MONTH LEASE 10,000 MILES PER YEAR</div> <div>\$1,650 DOWN • MSRP \$33,990 NO SECURITY DEPOSIT REQUIRED. TAX, TITLE, LICENSE AND DEALER FEES EXTRA. MILEAGE CHARGE OF .25¢ PER MILE OVER 30,000 MILES.</div>	<div>2013 CTS SEDAN AWD</div> <div></div> <div>\$179* PER MONTH ON A 36-MONTH LEASE 10,000 MILES PER YEAR</div> <div>\$1,999 DOWN • MSRP \$42,450 NO SECURITY DEPOSIT REQUIRED. TAX, TITLE, LICENSE AND DEALER FEES EXTRA. MILEAGE CHARGE OF .25¢ PER MILE OVER 30,000 MILES.</div>
<div>2013 SRX</div> <div></div> <div>\$299* PER MONTH ON A 36-MONTH LEASE 10,000 MILES PER YEAR</div> <div>\$1,270 DOWN • MSRP \$38,030 NO SECURITY DEPOSIT REQUIRED. TAX, TITLE, LICENSE AND DEALER FEES EXTRA. MILEAGE CHARGE OF .25¢ PER MILE OVER 30,000 MILES.</div>	<div>2013 CTS COUPE AWD</div> <div></div> <div>\$179* PER MONTH ON A 36-MONTH LEASE 10,000 MILES PER YEAR</div> <div>\$1,999 DOWN • MSRP \$41,700 NO SECURITY DEPOSIT REQUIRED. TAX, TITLE, LICENSE AND DEALER FEES EXTRA. MILEAGE CHARGE OF .25¢ PER MILE OVER 30,000 MILES.</div>

AUTO BODY SPECIAL

**WE SERVICE
ALL GM CARS**



**Take FIFTY BUCKS Off
COLLISION WORK!**
\$50 OFF
We work directly
with your insurance company

**DROP-OFF
FREE SHUTTLE
SERVICE**

PLUS, WE OFFER:
• CONVENIENT APPOINTMENTS • TOP DOLLAR FOR YOUR TRADE • CONTACT US FOR A FREE ESTIMATE ON ALL COLLISION REPAIRS!

Showroom Hours: Mon. & Thurs. 8:30 a.m. • 9 p.m. Tue., Wed., & Fri. 8:30 a.m.-6:00 p.m.

8333 EAST 11 MILE ROAD • I-696 & VAN DYKE • 586-758-1800

If traveling west on I-696, exit Hoover, follow Service Drive to Prestige Cadillac.
If traveling east on I-696, exit Van Dyke; take the second bridge past Van Dyke over the expressway to Prestige Cadillac.

Visit our website: www.PrestigeCadillac.com for all our specials

* For qualified GM Employees - no security deposit required. Tax, title, license and dealer fees extra. Mileage charge is .25¢ per mile over 30,000 miles. Luxury Lease Conquest Incentive - Must own or lease a 1999 or newer non-GM vehicle. GM Lease Loyalty Incentive - Must currently own or lease a 1999 or newer GM product. See dealer for details. Expires 8/30/13.



**INDEPENDENCE
AUTO REPAIR**

Full Service
★ We Have Tires ★

OPEN:
Mon-Fri
7:30 am-6pm
Sat.
8am-3pm

FREE Shuttle Service within a 10 mile radius
FREE Courtesy Check on any vehicle
FREE Coffee to everyone



2 Locations:

28775 Van Dyke • Warren
12 & Van Dyke
586-751-4440

15075 32 Mile Rd. • Romeo
Corner of 32 Mile & Powell Rd.
586-336-4440

Trans. Flush
w/ cleaner & additive.
Includes 17 qts. transmission fluid.
**OR Coolant
Flush**
w/ cleaner & additive.
Inclu. 3 gal. of Coolant
\$99.99
In-store offer good through 8-31-13

**Full Service Oil,
Lube & Filter
Change**
\$17.99
w/ Tire Rotation
\$26.99
In-store offer good through 8-31-13

**Front End
Alignment**
\$39.99
**4-Wheel
Alignment**
\$79.99
Camber & Caster
Adj. Additional
In-store offer good through 8-31-13

**Ceramic
Brake
Special**
\$99.99
Includes pad
installation
In-store offer good through 8-31-13

**10%
OFF Parts**
to All GM
Employees
w/ Badge
In-store offer good through 8-31-13