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Chrysler Canada: Dodge Spends Quality Time Developing First Vehicle of Italian-American Partnership

- 2013 Dodge Dart gets earlier start on new quality processes previously introduced with award-winning Dodge Durango
- Dart expands on performance quality attributes of its Italian cousin, Alfa Romeo Giulietta
- Dodge tested the Dart for more than 13.7 million kilometres
- Belvidere (Ill.) Assembly Plant introduces new quality procedures, including the company's first on-site Materials Lab

April 27, 2012, Windsor, Ontario - As the first vehicle to evolve from Chrysler Group's alliance with Fiat, the Dodge Dart builds off Alfa Romeo's performance virtues and Dodge's increasingly zealous attention to quality.

"We learned a lot as we launched 16 updated vehicles and introduced many new quality processes for the 2011 model year," said Doug Betts, Senior Vice President – Quality, Chrysler Group LLC. "Despite an unprecedented amount of product changes during that period, internal and external quality indicators show that all our brands continue to outpace the industry's rate of improvement for reliability.

"This is a crucial vehicle launch for the company as we re-enter the compact sedan market, and everyone is committed to launching a high-quality product," Betts said. "We're applying what we learned from the 2011 launches to the Dodge Dart's development right at the beginning of the program."

For example, the Jefferson North Assembly Plant (JNAP) in Detroit, which builds the Dodge Durango and Jeep® Grand Cherokee, was the first Chrysler Group assembly plant to install a dedicated Metrology Centre to house highly precise dimensional control tools. JNAP's Metrology Centre started inspecting parts just prior to volume production of customer vehicles and helped establish a new standard for fit-and-finish for Dodge vehicles, and propel the all-new Dodge Durango to the top of influential quality surveys in its launch year.

However, the state-of-the-art Metrology Centre at the Belvidere (Ill.) Assembly Plant, where Dart is assembled, started operations almost a year prior to volume production and provided valuable feedback to suppliers on pre-production components and systems well before the first prototype vehicles were built. These tools allow engineers to find the sources of build variation – even when components appear perfect to the naked eye – and resolve any fit and finish issues before customer vehicles are built.

Dodge expands, literally, on the virtues of its Italian cousin

While the Dodge Dart is an all-new vehicle, its underpinnings evolved from the Alfa Romeo Giulietta, an upscale Italian hatchback known in its home market for dynamic, road-gripping performance.

For the Dart's early development work before prototypes were built, Dodge engineers literally cut a Giulietta in half, widened it and welded the body to match Dart's dimensions to create several engineering mule vehicles for testing. The Giulietta mules disguised the Dart's hardware and helped the engineering teams test the durability of suspension components and evaluate vehicle dynamics and noise, vibration and harshness (NVH).

"We're starting with a great architecture that helps us achieve our strict performance quality standards that will make the Dart very competitive in the North American compact sedan segment," Betts said.

As Chrysler Group defines it, performance quality measures how well a vehicle matches customer priorities and stacks up against its competition. Criteria such as acceleration, braking, handling, seat comfort, quietness, storage space and fuel economy are among the hundreds of attributes Dodge engineers compare versus competitive cars.

Refinement you can see, touch and hear

Knowing that many car buyers make judgments about a vehicle's quality the first time they see it, the company's Perceived Quality (PQ) team set the bar high so that the Dart would fare well under the scrutiny of the most discerning car shoppers.

The PQ team works with designers, engineers and suppliers to enhance the fit-and-finish, surface quality, material options and even the sound quality of moveable parts like doors and storage bins. The Dart is the first Chrysler Group vehicle program that used PQ best practices from the start of development.

Although the Dart will compete in the heart of the compact sedan segment, the PQ team benchmarked more expensive European sedans with the goal that the Dart will look and feel comparable to an entry luxury sedan under close inspection.

Taking the high road, the low road . . . and lots of really rough roads

Dodge is testing the Dart day and night, on all kinds of road surfaces, at high and low altitudes and through blizzard conditions, as well as dry, desert heat. All that testing adds up to more than 13.7 million reliability validation kilometres.

Some of the most punishing tests take place inside the Chrysler Technology Centre on the Road Test Simulator (RTS). It recreates the abuse vehicles endure at the hands of a 95th per centile customer - meaning a customer who drives the vehicle in more severe conditions than 95 per cent of all owners. The RTS replicates a wide range of on-road and off-road driving surfaces and puts a lifetime of wear-and-tear on a vehicle in one month's time.

Dodge also evaluates vehicles under more typical customer scenarios. More than 100 Dart vehicles are tested daily for about 3 months until each vehicle reaches 58,000 kilometres. To reflect typical daily driving scenarios, these test drivers do not originate from the engineering ranks and are intentionally chosen from diverse backgrounds to represent customers of different ages, sizes and ethnicities. The test drivers also scrutinize all the customer functional aspects of each vehicle, every day of testing. This includes functions as simple as seat belt buckling, heating and ventilation operation and opening and closing storage compartments and windows. Seven different test protocols are used to better simulate random customer use and prevent test drivers from becoming desensitized to expected outcomes. The Dodge Dart quality team reviews the test drive data daily to find and fix any issues that arise.

The Uconnect Touch™ Media Centre also gets a thorough test drive – by a passenger who runs through a 12-page checklist to test the functionality and reliability of the system as well as how compatible it is with a wide variety of mobile phones, music players and other media devices.

Building quality into each Dodge Dart

Chrysler Group's manufacturing plants have integrated Fiat's World Class Manufacturing (WCM) principles that involve all employees in the manufacturing process for continuous process and quality improvements.

The Belvidere Assembly Plant, where Dart is assembled, has invested in new technology and processes to improve the quality of its vehicles. In addition to the new \$12.5 million Metrology Centre, the plant invested \$5 million for a new Centre for Technical Vehicle Validation (CTVV) – the first such quality centre in a U.S. Chrysler Group plant.

The CTVV will randomly audit newly built vehicles and measure up to 600 technical and functional characteristics, including emissions, fit-and-finish, heating and air conditioning performance and ride height. The Belvidere plant also will house the automaker's first assembly plant Materials Laboratory staffed with an onsite chemist. The CTVV and Materials Lab will allow engineers to identify and troubleshoot emerging issues onsite, with fewer delays from sending parts to Auburn Hills, Mich. or supplier locations for analysis.

"We obsessed over the quality and refinement of the Dodge Dart as it was developed, tested and built," Betts said. "As a company, we've really overhauled our processes and expectations for building quality vehicles and doing whatever it takes to satisfy customers."

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