

NEWS FROM



For Release August 1, 2016

Unique Roof Structure System by Vari-Form Simplifies Design, Saves Weight, Controls Cost On the All-New 2016 Nissan Titan

One-Piece Hydroformed Roof Rail, A-Pillar, and Hinge Jamb Also Reduces Part Count.

Livonia, MI – The second generation Nissan Titan pickup is all-new for 2016, and the XD has been named Cars.com 2016 Truck of the Year, with high marks for ruggedness and payload. Among the features making a significant contribution to the extra-strength capability of the all-steel body is the hydroformed roof structure system designed and produced by Vari-Form.

“The roof rail system is an excellent example of our Hydroform-Intensive Body Structures (HIBS) strategy,” said Terry Nardone, Vari-Form director of sales and marketing. “It’s essential to ensuring cab integrity and occupant protection, and our hydroforming expertise helped Nissan meet their targets for roof strength and crash performance.”

Designing this part around a single hydroformed component helped Vari-Form to commonize a diverse selection of roof rail configurations into a single concept that works well for all variants of the Titan model.

Mr. Nardone went on to explain that “The efficiency of our approach also reduces part count by over 20 parts per truck. In previous designs, those separate pieces had to be welded together to form the rail. Integration of features like flanges and piercings into the die allows production of the hydroformed tube as a single part. The resulting vehicle mass savings of 15.9kg are particularly significant because we can reduce weight while retaining the proven strength of steel.”

Noting that this is the first use of high-strength, variable-gage steel tubing in a roof rail application, Mr. Nardone indicated that Vari-Form R&D engineers adjusted the design to hold tolerances in the part coming out of the die.

About Vari-Form

Vari-Form is headquartered in Livonia, Michigan, and has production facilities in Canada, Mexico, Italy, China and the USA. Vari-Form originated the concept and application of tubular hydroforming to body, chassis and other automotive structural parts. Vari-Form is the industry leader in hydroforming, with more than 100 million parts produced to date. Looking forward, the Hydroform-Intensive Body Structures (HIBS) initiative from Vari-Form is redefining the way automotive manufacturers and tier suppliers view the vehicles of the future. HIBS is leading the way in demonstrating that critical components and systems can be hydroformed rather than assembled from stampings. The benefits are substantial, significantly increasing safety and structural integrity, while lowering tooling complexity, weight and cost. The company began

volume production using its patented Pressure-Sequence Hydroforming (PSH) process in 1990. For more information, go to www.vari-form.com.

About Crowne Group, LLC

Crowne, headquartered in Cleveland, Ohio, is a leading manufacturer and distributor of both OEM and aftermarket component parts for the automotive and other industrial equipment markets. Crowne Group offers a diverse portfolio of metals products, including hydroformed aluminum and steel parts and assemblies for the automotive industry, carbon and stainless steel tube and components for diverse industries, and fabricated tube products for exhaust systems. The Group currently employs approximately 4,000 people and operates eleven manufacturing facilities in North America and three offshore manufacturing and assembly facilities. For more information, visit www.crownegroupllc.com.



Picture Caption

The all-new 2016 Nissan Titan features a roof rail, a-pillar and hinge jamb reinforcement produced by Vari-Form around a one-piece hydroformed tube.

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