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Innovative Load Beam Assembly from Vari-Form Meets the Challenges of Tight Spacing, Stiffness, Durability in the All-New 2017 Chrysler Pacifica

Hydroformed Component Forms a Lightweight Structural Link between the Door Ring and Front Rail

Livonia, MI – The all-new 2017 Chrysler Pacifica redefines the minivan segment. Re-engineered from the ground up, the Pacifica is built on a new platform that delivers class-leading ride, versatility and technology. An essential component of this next-generation vehicle is the front-end load beam assembly designed and manufactured by Vari-Form.

“Very tight packaging was one of the challenges we faced on this technically-advanced van,” said Dean Gericke, Vari-Form director of engineering. “We used state-of-the-art hydroforming techniques, within the parameters of the FCA US LLC design, to develop the structural system connecting the door frame ring with the front rail. Our concept improves upon a part originally designed with stampings that occupied too much space. We substituted hydroform tubes into this space, delivering the section size needed.”

Mr. Gericke went on to note that the use of advanced high strength steel, hydroformed into dual thin wall tubes, contributes to meeting packaging constraints. “To produce a tube this thin required the tube manufacturer to upgrade its production. Then we used Cold Metal Transfer welding to minimize potential distortion from heat.”

Improving occupant protection is another advantage of the Vari-Form load beam structure. By creating an additional load path for impact forces, the Vari-Form design helps meet IIHS (Insurance Institute for Highway Safety) targets for narrow offset front protection.

“Our load beam assembly helps make the body structure of Pacifica the lightest and stiffest in its class,” pointed out Mr. Gericke. “That leads to enhanced agility when driving, outstanding ride characteristics for passengers, and reduced noise, vibration and harshness that will be appreciated on every ride.”

About Vari-Form

Vari-Form, one of the Crowne Group of companies, 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.



Caption

The all-new 2017 Chrysler Pacifica features a dual-tube hydroformed front load beam assembly produced by Vari-Form. Despite tight packaging constraints, the lightweight structure, contributes to reduced noise/vibration/harshness and meets IIHS targets for narrow offset front protection.

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