

## **ProMetal to Use Patternless Casting Technology for DiMora Motorcar's V16 Engine**

*By Dan Maas / ProMetal RCT, LLC, An Ex One Company*

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*Ex One Company, has become the latest Technology Partner in the DiMora Motorcar V16 \$2 million Natalia SLS 2 using Proprietary 3D printing technology digitally produces sand molds and for metal castings without tooling for the 1200-hp Volcano engine.*

Troy, Michigan – ProMetal RCT, LLC, an Ex One Company, has become the latest Technology Partner in the DiMora Motorcar program to develop the \$2 million Natalia SLS 2 sport luxury sedan. An integrated product and process team will use the ProMetal digital 3D printing technology to produce castings for the 1200-horsepower Volcano V16 engine without the need for patterns or tooling.

Rapid Casting Technology (RCT) is a generative or additive process. The ProMetal RCT? equipment automatically builds sand molds and cores for casting metal directly from CAD data. Standard foundry industry materials are used, enabling easy integration of the new equipment into existing manufacturing and foundry procedures. The large building volume and high building rate combine to make patternless production a reality for metal-based prototype castings and low volume production. The molds and cores are built in an additive layer-wise fashion using a printhead, analogous to the ink-jet technology commonly used in desktop printers.

According to Dan Maas, Director of Business Development for ProMetal, “This revolutionary ProMetal RCT process allows design freedoms, heretofore never available to the casting designer or the foundry. Removing the requirements for parting lines, draft angles and providing undercuts is just the tip of the iceberg,” asserted Maas. “Providing nested cores, spiral vents, volute shapes, integration of multiple components, in-situ cores, and unique rigging geometry to minimize turbulence are design features that are being utilized today by advanced companies.”

Ex One Vice President Dr. Howard Kuhn has noted that today’s high-technology workforce is well prepared to take advantage of the capabilities made available through digital manufacturing. “The modern generation’s love affair with digital products positions them for a comfortable transition to, and enthusiastic attraction toward, digital work in manufacturing--through both virtual simulations and exciting production tools, such as ProMetal’s Rapid Casting Technology.”

“The stringent specifications of the DiMora Volcano V16 engine give us an excellent opportunity to demonstrate what RCT allows the engine designer and manufacturer to accomplish,” said Maas. “There is no room for error when building an exotic, lightweight aluminum engine that produces 1200 horsepower.”

DiMora Motorcar Founder Alfred DiMora pointed out the advantages that most impressed him about the ProMetal process. “This technology is at the forefront of digital additive manufacturing for the production of complex 3D shapes. During the design process, being able to accomplish in a few hours what used to take days allows you to refine your design through additional iterations. Eliminating patterns and tooling saves time and reduces waste, making the entire process faster, cheaper, and greener, while producing a final product that is superior in every way. The Volcano V16 will be an unmatched engine thanks to the engineering skills and technology of ProMetal RCT.”

### About ProMetal RCT

Based in Troy, Michigan, ProMetal RCT, LLC is a leading company in 3D printing. It supplies an innovative process for the fabrication of sand molds and cores aimed for prototyping and short-run

production of metal castings. Its primary areas of expertise are machine tool design, industrial production methods, rapid prototyping and rapid manufacturing. ProMetal RCT is a subsidiary of The Ex One Company, LLC, a family of companies that are committed to transitioning breakthrough manufacturing process technologies to the world's factory floors through research, development, and commercialization of advanced equipment, materials and services. From freeform digital production to innovative micro machining techniques, Ex One strives to dramatically improve manufacturing techniques in the US and worldwide. For more information about how the Ex One companies can support your manufacturing needs, please visit [www.exone.com](http://www.exone.com) or [www.prometal-rct.com](http://www.prometal-rct.com).

#### About DiMora Motorcar

Based in Palm Springs, California, DiMora Motorcar crafts automobiles designed to exceed expectations for safety, performance, technology, ecology, beauty, comfort, and luxury. We are the first to reveal the design, production, and testing of our automobiles via the Internet so that people around the world can learn about--and participate in--the process.

The founder, CEO, and driving force behind DiMora Motorcar, Alfred J. DiMora, produced two of America's finest luxury automobiles, the Clenet (as owner) and the Sceptre (as co-founder). When President Reagan declared 1986 the Centennial Year of the Gasoline-Powered Automobile, Mr. DiMora's Clenet was selected as the Official Centennial Car. As a result, he and the Clenet were honored at the Automotive Hall of Fame in Michigan. He also founded Starbridge Systems, Inc., where he developed the FPGA supercomputer. Using his technological and automotive backgrounds, Alfred DiMora blends the two worlds together to create this new experience in automotive history, the Natalia SLS 2. For more information about our products and how your company can become a Technology Partner of DiMora Motorcar, please visit [www.dimoramotorcar.com](http://www.dimoramotorcar.com).

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Based in Palm Springs, California, DiMora Motorcar crafts automobiles designed to exceed expectations for safety, performance, technology, ecology, beauty, comfort, and luxury. Alfred DiMora blends the two worlds together to create this new experience in automotive history, the Natalia SLS 2. For more information about our products and how your company can become a Technology Partner of DiMora Motorcar, please visit [www.dimoramotorcar.com](http://www.dimoramotorcar.com).

Category	Transportation, Technology, Automotive
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