



RenShape® Solutions
unique RenTool™ casting
system used to build
Michelin- award winning
model car

Case History

New RenTool™ casting system used for Award-winning 'Car for China'

Designed to meet the demands of 21st century urban living in China, the Xin Lang was one of five innovative car designs that were selected as winners of the Michelin Design Challenge 2004 – 'Car for China', and exhibited to great acclaim at the Detroit Car Show earlier this year.

Xin Lang was designed by the young Slovenian car designer Uroš Pavasovič and made with RenTool™ tooling resins from RenShape® Solutions, using a unique casting process known as 'Cliffhanger'.

Designed to produce oversize castings for automotive parts, the mould used for this process is 268cm long and 210cm wide and looks like a large needle bed. It consists of a large number of adjustable wooden stamps or pins, which are put into position via CAD data and can be adjusted either upwards or downwards, i.e. moulds can be either positive or negative.

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The size of the mould allows for several full size parts to be cast simultaneously, such as a car roof, left-hand and right-hand doors and a front spoiler. Thus, the complete Xin Ling scale model could be cast in a single shot using this system.

The Xin Lang model was produced using CATIA data supplied by Uroš Pavasovič, which was then edited for process compatibility. From this data, a 1500 x 500 x 450mm solid block was cast using RenTool™ 5150 resin. This block, weighing approximately 300kg, was then transported to Slovenia, where it was CNC machined to its final dimensions by Kovinoplastika Lož. Technical support for the project was provided by Huntsman Advanced Materials' distributor in Slovenia, Adipos d.o.o. based in Ljubljana.

- **Application:**
Cliffhanger casting system and RenTool™ resins used to produce concept car model in a single shot
- **Special service conditions:**
Large scale RenTool™ block cast in a single piece for CNC milling to final dimensions
- **Advantages for customer:**
 - time and cost effective production of concept model
 - single cast block weighing 300kg easily transportable to CNC milling site
 - completed on time for display at the Detroit Motor Show
- **Advantages over the competition:**
 - cost effective single shot casting
 - simultaneous casting of multiple large parts
 - minimises waste by eliminating need for individual moulds and disposal of spent moulds
 - high quality finish suitable for painting and use as display model
- **RenShape® materials used:**
 - RenTool™ 5150
 - Cliffhanger casting system
- **Customer location:**
Ljubljana, Slovenia

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The model was then spray-coated twice after which a primer was applied. Finally the model was painted with metallic automotive paint, producing a high quality gloss finish, ideal for public display.

This unique RenTool™ Casting Technology system provides considerable time and cost savings for customers because it uses less material and produces a smooth surface, which needs little finishing. The mould production and mould set up are all CAD driven so customers can either enter their own data or RenShape® solutions will execute data conversion as a service. And, of course, it saves customers the expense of capital investment in their own casting machinery and equipment.

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