

Miniature *Masterpiece(s)*

SolidScape last came to the forefront of the AM industry almost one year ago when it was acquired by Stratasy in a transaction worth around \$38 million. Soon afterwards TCT's Duncan Wood visited the Merrimack set up to see for himself the changes in place. One of the most startling revelations was that 25% of SolidScape's machines — known for their high-accuracy wax-based printing — were active outside of the jewellery industry, an industry closely linked to SolidScape in the minds of the AM community.

This represented around 1000 machines active in areas as diverse as medical applications, electronics and toy development. Two companies that know all too well how important SolidScape's accuracy is outside of the jewellery industry are Misko Models and Horbach GmbH. Misko — who proclaim that they

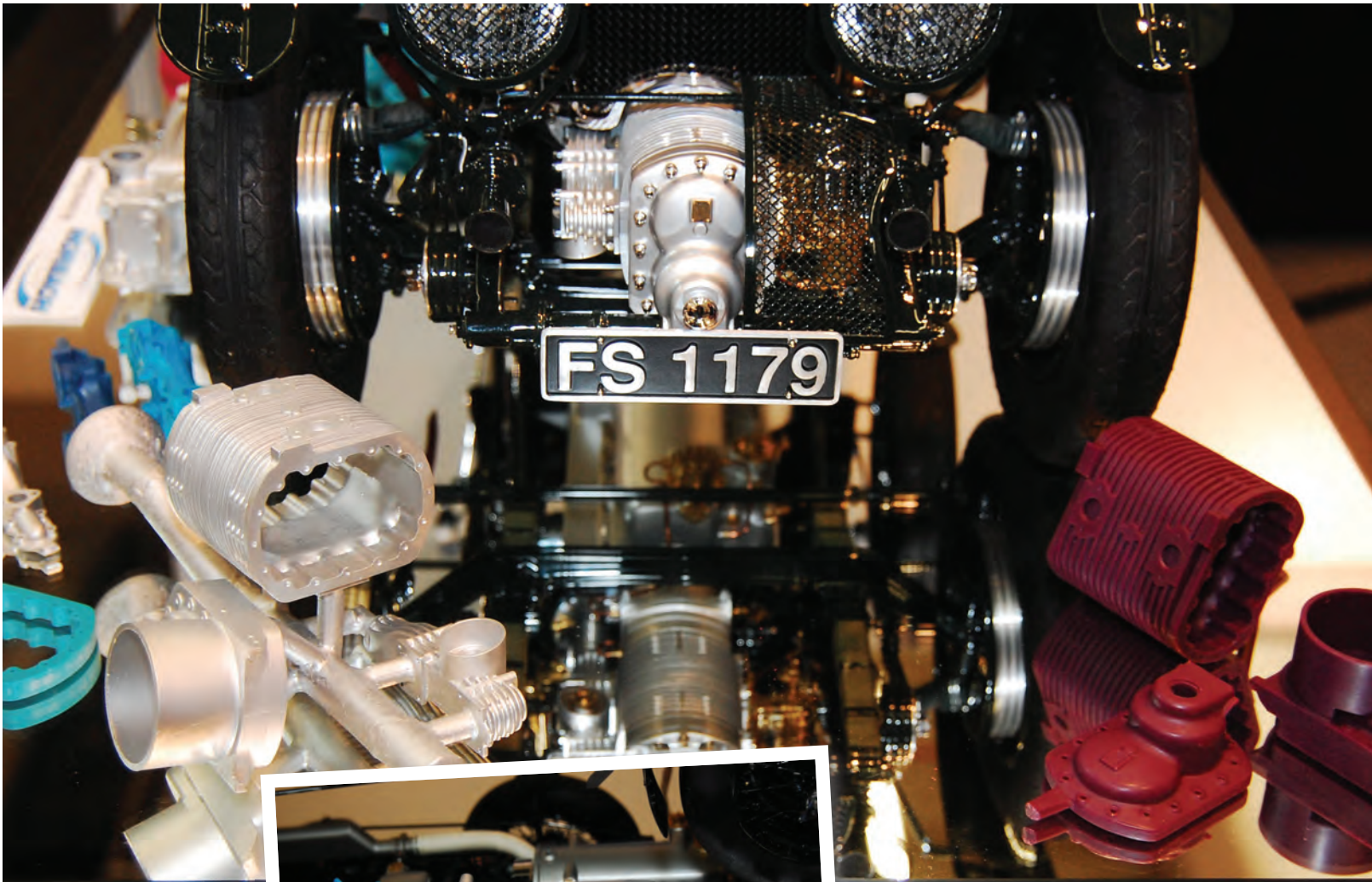
make "Simply the best carmodels in the world" — employ Horbach for casting work on the stunning scale replicas.

Misko Models have recreated one of motoring's most distinguished icons, a 1931 Bentley 4.5 litre 'Blower', at 1:5 ratio. Weighing in at a substantial 24 kg this is not to be confused with a toy — this is a serious piece of kit that fuses the very best in precision manufacturing techniques and the unmistakable love of a craftsman. Exhibited in the flesh at Euromold last December, the car drew wave after wave of admiring stares from the aisles — and it's not difficult to see why.

The original Bentley Blower was somewhat of an unwanted success from the point of view of Bentley, given that their mantra when introducing the 4.5 litre (succeeding the 3 litre) was "There's no replacement for

The 7,300 'miniature masterpieces' on the 'Blower' allow:

- Workable steering
- Adjustable ignition
- Workable choke on steering wheel
- Workable gearstick
- Motor hood can be opened
- Fuel tank cap and radiator cap can be opened
- Wheels can be removed by central lock nut (with original tooling)
- Workable handbrake
- Workable brake and clutch
- Moveable windscreen
- Doors can be opened
- Seats can be removed to access the bottom
- Workable car jack



displacement!” — the Bentley founder, W. O. Bentley preferred to increase the engine size over any forced induction systems. Luckily for history, one of the ‘Bentley Boys’, Sir Henry Birkin, decided to try it anyway, producing five supercharged models to compete at the Le Mans endurance race at Le Circuit de la Sarthe.

Misko took around 18 months to painstakingly recreate the Blower down to the smallest possible detail. While the input of the highly trained craftsmen remains at the heart of the model making process, AM technology — specifically Solidscape’s high-accuracy process — can push the models to new limits of precision and faithful replication. The Misko model is comprised of 7,300 individual parts that are so accurate that they carry the original Bentley part numbers! A replica of the original tool kit, including working jack, was also included in the project.

With an estimated 34 original vehicles still in existence, this project has as much importance for the heritage of the 4.5 litre Blower as for the developments in model making facilitated by AM.

Much of the casting for critical engine components was undertaken by Horbach GmbH based from models created on Solidscape machines. Precision was of paramount importance for the model’s many moving parts such as the workable brake, clutch, choke and adjustable ignition — more so than on the original even, which had scale on its side.

Christian Müller CEO at Horbach explained: “The quality of parts we can create using the Solidscape 3D printer are beyond what we could previously achieve with other AM systems, CNC machining and even skilled handwork. We believe that the quality of the parts is now the best in the world. Every detail, down to custom-made screws, is bespoke to this product; nothing ‘off-the-shelf’ was used in the model’s creation.

“We do a lot of work now for Misko, and the capability of the Solidscape machine for use with the lost-wax casting process is central to that. We have cast from

aluminium, brass, bronze, nickelsilver (copper/nickel/zinc alloy) from the wax cores, all with excellent surface finish and accuracy. For this type of work absolute speed is not of the highest importance — it is most important to get the quality as high as possible, which is what we always strive to do.”

Fabio Esposito, Vice President, Worldwide Sales and Marketing at Solidscape explained: “This stunning Bentley model was a huge hit at the Euromold show in Frankfurt, Germany. When precision counts, top professionals count on Solidscape. This is a fitting example of how Misko Models and Horbach GmbH employed our industry-leading precision in 3D printing to create this model masterpiece.

Specification of the original car:

- Chassis-Number MS 3931
- Motor-Number MS 3931
- License plate FS 1179
- Year build: May 1931
- Type of body: Saloon W
- Body maker: Gurney Nutting
- First owner: James F. Bryson