

EMS Scans a BMW Vehicle

Scale model die-cast vehicles and plastic assembly models have been around for a very long time. Did you ever wonder how the companies that make the scale models create a perfect replica of the original vehicle? In some cases the manufacturer will give them the CAD data to scale down but in many other cases they will not. This leaves the creator of the scale model two choices, they either create the model by referencing pictures and hand measurements or 3D scan the vehicle.

The Problem

A scale model company wanted to create a scaled model of a BMW 5 Series sedan. The choice was made to 3D scan an existing vehicle so the model would be as accurate and detailed as possible. Scale models with more detail sell for a much higher price than others that are not very detailed.

The Solution

EMS was contacted and in less than a day they had the outside of the vehicle fully scanned using their Surphaser 3D laser scanner. The Surphaser scanned the entire vehicle in high resolution and detail in 10 scans. The Surphaser captures so much resolution and detail that each scan can be as large as 1 gigabyte in size. For the inside EMS used their Z Corp Z800 high resolution hand held 3D scanner to capture all the cars interior detail.

The second step, and usually the process that takes much more time is the 3D CAD modeling from the raw scan data. EMS used RapidForm scanning software to convert this raw scan data into a clean, highly detailed CAD model. In the case of an automobile it is usually a "hybrid" model containing both surface and solid model geometry. RapidForm is unique in 3D scanning software as it's the only product on the market that can do both surface and solid modeling. The CAD modeling process took about 2 weeks to complete but when finished the detail of the final CAD model was very impressive.

To do this type of work, EMS uses very powerful computers to collect, align and merge these large data sets. High resolution is important in 3D scanning if you want to capture all of the detail of the model you are scanning.

Conclusion

When it comes time to capture any type of vehicle in very high resolution EMS has the equipment and expertise to complete the project.

Visit www.ems-usa.com for more information



3D Scanning the vehicle



Finished CAD model from 3D scan data



Final die-cast model