



BRAHMA3

PRODUCT SHOWCASE & EXPERIENCE

Mechanical & digital exhibits built to reality for all public-facing events
& business development meetings



How we built a 1 : 1 mechanical replica of a hydrogen fuel cell engine

Model optimization and manufacturing - a story of design involvement & engineering experience

At the Outset

We had to build a 1:1 replica of a hydrogen fuel cell engine with an overall size of 1220 x 1153 x 834 mm.

The Challenge

Optimising a 3D design assembly file of size > 2GB containing over 1000 components for manufacturing.

Our Approach

Our team delved into assembly understanding, model optimisation & component categorization.

Our Work

Our extensive suite of services encompassing large file handling, 3D sculpting, design for manufacturing, 3D model optimization, and advanced analysis services ensured the seamless evolution of vision into reality.

Our Process

We began by understanding the assembly and the critical parameters through focused engineering involvement. We categorized the components into machining, 3D printing, fabrication, bought-out, etc., and continued with optimizing the design files for wall thicknesses and assembly.

The planning & design stage helped us keep the costs for development low. We manufactured the components in batches, tested the assembly & completed the build.

The Result

This beautiful engine is displayed in the experience zone at Bosch, Bengaluru and has lead to the further development of multiple replicas that my client proudly uses for events and business development meetings. In fact, the engine today is also used as an educative tool to train employees on various industry practices and assemblies.



BRAHMA3

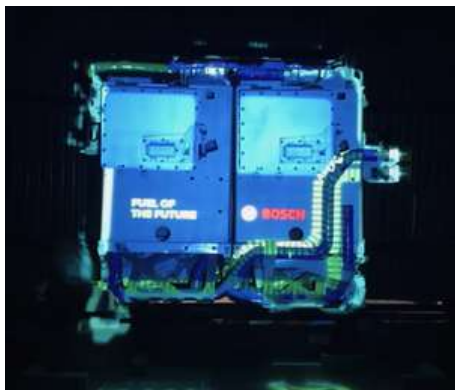
The era of Innovation engineering

At Brahma3, we are pioneers of a new era - the convergence of upgraded materials, revolutionary designs, and cutting-edge manufacturing processes.

- Have you ever felt the need of highly engineered replicas that represent your products at events & expos?
- Have you faced the need to have a self-explanatory interactive experience for your product?

ENGINEERED REAL-LIFE REPLICAS

DIGITAL PROJECTIONS & EXPERIENCES



Projection mapping directly on the exhibit for live interactive experience



Hydrogen fuel cell engine for Bosch (replica)

We lead the charge through new-age manufacturing techniques and leverage technologies like 3D scanning, advanced 3D printing processes such as SLA, SLS, and DMLS, and high-end manufacturing methods like 7-axis machining.

10+

Years as pioneers of
3D printing technology in India

14+

Advanced manufacturing
techniques

20+

Engineering product
developments

2300+

Complete prototypes
developed

40+

Global manufacturing
partners

“We have had a very dependable association with Brahma3 over the last 10 years on developing industrial prototypes & assemblies. Their involvement, insights & value-adds have gone a long way in executing projects to our requirements and we are extremely happy with our collaboration”

- Technical specialist & Team lead, Engineering department, Bosch

Reach out!



BRAHMA3

info@brahma3.com

www.brahma3.com

+91 88610 64660 | +91 99867 25215