Smarter Manufacturing

3D Printing Helps Honda Cars India Ltd.
Stay Ahead on Multiple Fronts.

Founded in 1995, Honda Cars India Ltd. is a world-leading automaker that provides a wide range of cars, from the budget passenger hatchbacks like the Jazz, WRV and BRV to popular sedans like Amaze, City, Civic, and the luxurious CRV SUV. Headquartered in Gautam Budh Nagar, Honda Cars India has two manufacturing plants and serves over 2.5 million customers all over the country. Honda City, an iconic sedan launched twenty years ago, is still the best seller in its segment.

“3D printing has opened up new opportunities for production, factory maintenance and R&D.”

Mr. Navid S. Talib
Operations Head (Manufacturing)
A Need for More Efficient and Ergonomic Tooling

Innovation being its hallmark, Honda Cars India never stops introducing new technologies. For instance, its inspection jigs were made with fabricated hollow metal pipe structures and CEBA (ceramic backing). Fabricated metal pipes provided the necessary strength and CEBA provided the smooth finish and complex shapes on the peripheries. However, machining accuracy was challenging and the costs, both in terms of raw materials and manpower, were significant. The lead time for the whole process could be as long as 2 months and significantly delay delivery. Furthermore, the jigs were quite heavy, increasing the associate’s fatigue and negatively impacting their morale.

Along with this, one of the key factors behind Honda Cars India’s success is its cost-effectiveness in terms of operation, manpower and maintenance. Therefore, when Mr. Talib, thought about introducing new technologies to solve these problems, he was always cautious. “We cannot simply copy and paste what Europe, America, and Japan are doing, as we would lose the cost edge” was his thought. But the need to reduce lead time and improve quality was urgent. In addition, Honda Cars India always places a high value on its employees and had introduced programs like New Honda Circle to encourage associates to experiment with their creative ideas. So in an effort to balance cost-effectiveness and efficiency, Mr. Talib started to look for new technologies and turned to 3D printing for a solution.
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Solving Big Problems With a Big Printer
That solution came in the form of the Stratasys Fortus 900mc™. The Fortus 900mc has been the perfect answer because it’s built for manufacturing and heavy industries. It has the largest build size of any FDM® system and can handle the most demanding manufacturing needs.

In its collaboration with Honda Cars India, Stratasys uses the Fortus 900mc to print inspection jigs with ABS-M30™, a material known for its tensile strength, tensile modulus, high-temperature resistance and impact toughness. Once the company began 3D printing the inspection jigs, the improvement was immediate. Because the jigs are printed directly from CAD data, the desired accuracy was easily achieved. The once lengthy process was shortened by 40-60%, which means a project that used to take two months can now be completed within 15 days. This not only means a much faster delivery, but also gives designers more iteration opportunities, increasing prototype quality.

With thermoplastics replacing metal and CEBA, the jigs are no longer easily damaged, and their weight has been reduced approximately by half. This means lifting of much lighter jigs for the associates, which greatly reduces fatigue. Even more surprising is that with all these improvements, the total cost of jigs and fixtures has been cut by approximately 50%.

3D Printing is Here to Stay
After this successful collaboration, Honda Cars India has ordered an F370™ from Stratasys to train the associates in using the printer and the GrabCAD Print™ software, and there are plans to introduce more machines in the future. Mr. Talib said, “3D printing has opened up new opportunities for production, factory maintenance and R&D.” Honda Cars India is hopeful that 3D printing will eventually be able to produce production parts for them and take over the R&D and maintenance sectors for production.