

RAPTECH ENGINEERING

NEW IDEAS WITH THE LASER

Nitin Borhade and his brother Deepak Borhade are the Directors of Raptech Engineering Pvt Ltd, a Pune, India based company which produces production support equipment for the automotive sector. Their father, the late Mr. Sitaram Borhade, who was working as a toolroom machine operator, started the company in 1990, which was initially named “Nitin Engineering Works” with a small Lathe Machine in 150 sq. ft. rented space in a garage with the purpose to generate additional income for the family. Nitin, who was 17 years old at the time, joined his father while pursuing his education in the commerce field. “Initially, customers were limited to Bajaj Auto & KOEL, but by 2000 we had already become component supplier for several car manufacturers in India,” Nitin tells us. Their growth was explosive. In 2003, they started working with well-known companies providing dedicated production equipment such as racks, pallets, trolleys and jigs. Subsequently, they also began to propose their own design solutions. Today Raptech has close to 200 employees and can boast among its customers names such as Skoda-Volkswagen, Tata Motors, Fiat, Ford, Mahindra and Suzuki, to whom they provide new, replacement and restoration equipment and assistance, given that the products’ lifespan is six months to a year.

A solution for every customer problem

“The numerous automotive companies in India needed equipment to set up the various departments: paint shop, body shop, assembly shop etc. With the launch of every new car model they require different equipment.”

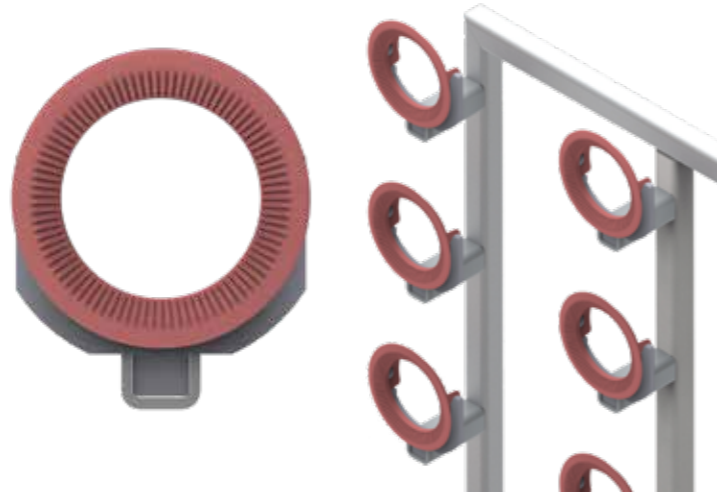
Nitin explains and continues, *“The first big order came from General Motors, thanks to a person I had met and who appreciated my proactive attitude, even though I did not have specific training in the field. It was at that time, talking to people and visiting many Automotive companies that I saw a business opportunity in that market.”*

Raptech’s strength lies in the speed with which it manages to propose a solution. The customer brings the problem and they propose customized solutions that optimize production, allowing the customer to choose and immediately start production. *“I was not trained as a designer, but I sensed that those processes could be made much more efficient. Much time could be saved by properly designing the fixtures. And this has become a must for Raptech Group,”* concludes Nitin.

The right machine to free the imagination

The inclusion of the LC5 system, with the possibility of laser cutting both sheet metal and tubes, has multiplied the opportunities to develop innovative solutions, creating new advantages for Raptech and their customers. Nitin explains it to us in concrete terms: *“Before purchasing the LC5, the painting fixtures were made with solid round or rectangular bars that were cut to size and assembled manually, a job that required specialization and experience. Now most of the work is done with laser cut tubes and profiles and the first advantage is in productivity since we have gone from one painting fixture per day to 10 fixtures. In addition to productivity, accuracy has increased and we have optimized the cost of labor (30% less).”*

But the greatest advantages derive from the possibility of realizing the innovative ideas that are always present in those who know their work well. The fixtures made



with tubular elements instead of with solid bars are more capacious for the same weight, are more resistant to deformation caused by temperature changes that characterize for example the painting jigs (they last 1000 cycles instead of the 500 of the previous fixtures), are more precise and they may contain dedicated elements that greatly simplify the loading and unloading operations made by the end customer.

Some concrete examples

Nitin shows us the fixture for painting the ignition key rings mounted around the ignition systems of cars. They are small, light parts that are not easy to hold in position during painting. The laser cutting of tube and sheet metal by the LC5 system has made it possible to create a lighter and more resistant fixture than before, placing 64 discs instead of the previous 32. Thanks to the intelligent use of tube and sheet metal, it has been possible to create an extremely effective self-locking system which reduces the welding time of the fixture by 60% and makes the loading and unloading time of the fixtures by the end customer extremely quick. What now takes a couple of minutes previous took ten minutes to set up the pieces to be painted on the fixture.

Another example is the painting fixture for the plastic cover on the driver’s door where the core issue was how to support the piece in a stable way, guaranteeing effectiveness in insertion and extraction. Previously there were pieces that were rejected due to imperfect locking and distortions of the fixture due to heat, those are no more.

In the production of pallets for the handling of raw rubber sheets for a total weight of 2 tons, a structure with rounded corners with a certain radius was required which was performed on a specific machine and is now made of round tube with a series of special laser cut-folds and overall the welding time has been greatly reduced, increasing productivity. Today Raptech produces 50 pallets in two days whereas previously it took more than a week.

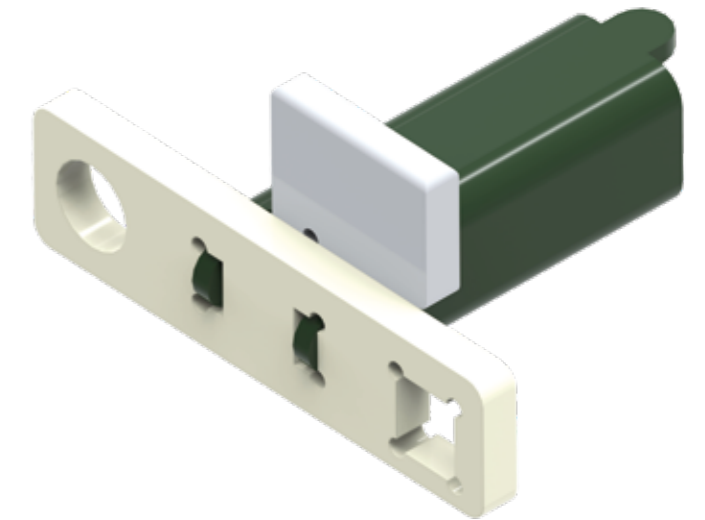
Nitin’s imagination has also found possibilities to express itself in a containment system of the tunnels (the central part of the car, between the two seats) which are placed in a rack with an automatic mechanism that when a tunnel is deposited automatically prepares the equipment for the next housing. This has proved to be a particularly ingenious mechanical solution that surprised customers who were now able to fill the rack extremely quick.

Finally, a trolley for storing and transporting the secondary engine frames (heavy and bulky pieces) for which a two-level structure has been designed that maximizes the quantity of pieces that can be transported. An object that previously required a demanding process to be performed manually, due to the high number of precision holes to be made on the frame, is now made with the laser resulting in an improvement in productivity by 80% and a reduction in assembly time by 50%.

Technology as a tool for internationalization

For Raptech, the purchase of the LC5 was also a technological leap to establish itself outside the

Indian market. *“Our clients are all international. If we want them to have confidence in our ability to meet their needs, we must give them evidence of the quality of our production process. When we said we were buying the LC5 from BLM GROUP, the customers had no problem confirming their trust in us,”* explains Nitin who concludes with this anecdote: *“John Deere’s Indian branches visited the plant and saw that they are not just specialized in structural work, but they are capable of supplying a complete product. Now John Deere has added Raptech to their international supplier list.”*



Fixture welding times reduced by

60%