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# ALL GEARED UP

THEY ARE THE LESS GLAMOUROUS PARTS OF CARS, BUT SPICER INDIA'S PRODUCTS SPEAK FOR THEMSELVES

BY MITALEE KURDEKAR

**AN AXLE OR GEAR IS OFTEN RELEGATED TO** the bottom of the value chain, quite literally too. It may seem unfair, but there's an underlying compliment in this realisation. Because even though they do not make up the glamour quotient of automobiles, without the axle or gear, there would be no vehicle at all!

One company that knows this all too well is Spicer India Private Limited. A joint venture between Anand Group, India, and Dana Holding Corporation, USA, the auto components major, which was set up in 1993, is known for making axles, drive shafts (propeller shafts) and drive-train products as well as genuine service parts.

"Spicer India is the largest Dana company in India. Deep Anand incorporated this company at a time when there were no customers, because the customers were making their own axle parts and there was no external supply. His thought was that, over a period of time, this would change. He had been talking to his industrialist friends, so he had an insight that this will change. He collaborated with Dana and brought in multiple companies to India," explains P

Arul Kumar, MD, about the origins of the company.

Today, things are completely different from when they started. Spicer India is supplying to customers like Mahindra, Tata Motors, Ashok Leyland, Volvo-Eicher and Daimler India, and is a leader in the small, light and medium commercial vehicles and the utility vehicles market for axles and drive shafts. In fact, its biggest competition happens to be its customers themselves. For instance, Mahindra makes their own axles and Tata Motors used to do the same at one point. Of course, today 43-44% of Spicer's total business comes from Tata Motors, since they stopped making their own axles. With the Indian automobile market going through a recession, this is going to be common. Mahindra has already decided to do the same thing, professes Kumar.

Even the total drive shaft or propeller shaft is facing a similar fate, with Spicer's share of this business standing at about 36-40% of the total market in India, while on the axles' side, because Mahindra and Toyota-Kirloskar still continue to make parts, Spicer's market share is around 30%. In both cases, this



Sometimes a low cost country can teach an advanced country a number of things.  
- P Arul Kumar

1. A bird's eye view of the state-of-the-art gear plant in Chakan.



makes Spicer the number one independent manufacturer (apart from the OEMs) in the country.

#### Innovating to compete

Despite the formidable competition in India, Spicer has stood the test of time. In fact, it has been cranking up the heat as far as technology and skilful innovation go and has managed to carve a niche for itself as a preferred and sometimes single-source supplier for most of the leading automotive OEMs in the country and abroad. Of course, the credit for this success also goes to the passionate men and women working across its six factories in India, led by Kumar's astute instinct for the market conditions.

Even though there is no specific product research and development carried out in India, there is a Technical Centre in Hinjewadi, Pune, which does all the testing and validation of products right here, as opposed to in the USA or Germany previously, hence bringing down costs for the customer. It also participates in product and process tweaking, in order to adapt to the requirements of the local market.

Spicer obviously benefits from Dana's technology, but sometimes it does some innovating of its own

too. One example is the banjo axle. "When General Motors first came to India in 2004-5, they launched the Tavera, and it needed a different type of axle called the banjo. Dana had no experience with making one for smaller sized vehicles, so, on behalf of Dana, our team designed everything, and then Dana validated it. That was the first time we introduced such a light (10-12kg reduction in weight) axle. It's more efficient and consumes less oil, the ground clearance is much more, so the vehicle mobility is better off the road," explains N Vakil, senior VP, strategic projects.

Kumar adds, "So this means that the design evolved here and then got accepted in the US, where it was tested and then launched for the first time. It became a success and now it has become a Dana property. The product is now used in



2. A finished front axle for independent suspension 4x4 vehicles.

3. The gear factory uses a Kuka robot for material handling.

4. Each batch goes through rigorous testing at the laboratory.



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other markets as well. Sometimes a low cost country can teach an advanced country a number of things." This pioneering design is currently in use for the Xylo, Quanto, XUV 500, Ace and Dost in India.

Sometimes, Spicer India also innovates for Dana's sister concerns in other nations, helping them bag global orders and often manufacturing and exporting these products to them. Around two million such components are supplied through Dana Holding Corporation, USA, and end customers include the likes of General Motors, Jaguar Land Rover, Volvo, Mercedes Benz and Volkswagen, across the USA, UK, Thailand, Germany, Spain and China, to name a few. For instance, they have developed an EDL (electronic differential lock), which can change the torque with just the press of a button. They have bagged an order for the Volkswagen Crafter (UK) and will export this component to them. Similarly, their gear technology has got them an order for 40,000 (a year) high tech gears from Jaguar Land Rover (UK), with the axle supplied through the UK plant of Dana.

Kumar points out that almost 65% of sales come from domestic OEMs, while 25% are attributed to exports and the remaining 10% are from after market sales. The company follows its own Anand Heijunka Production System (AHPS), a derivative of the Toyota Production System. Interestingly, the company integrates three Health, Safety

and Environment (HSE) standards, one that the government or the local bodies have laid down, the second coming from Anand and the third being the Dana global standard, which Kumar insists is the most stringent, therefore the most important to them. They track performance using 60 KPIs (Balanced Score Card), 12 of these being dash-board or key indicators, clearly visible across boards on the shop floor at their Chakan plants.

#### Strength in manufacturing

Spicer's axle plant in Chakan, Pune, happens to be the second largest of its plants, boasting an expansive 8,730m<sup>2</sup> of land area. It manufactures axles – both of the Salisbury and the Banjo variety. Employing the Dana AdvanTek Process, it caters to the needs of a majority of the prominent OEMs, such as Tata Motors, Ashok Leyland, Mahindra & Mahindra, Mahindra & Mahindra Trucks and Buses Division, VE Commercial Vehicles, Force Motors, Ford, General Motors India, Daimler India Commercial Vehicles and Maruti Suzuki India, among others. Using casting, forging and special steels, the two flexible assembly lines are able to produce a variety of customised axles for their clients, with changeovers as low as one minute long. Despite

5. The Chakan plant employs around 15% women, and plans to reach a figure of 30%.

6. Improvements to design are at the core of operations, as seen with this Slip Joint SPL 70 that boasts improved strength, sealing and balancing capability with involutes spline.

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the demanding schedule, the plant, which currently employs around 15% women, has completed six million hours without lost time. The finished goods inventory time is one or two days, or a maximum of three days for some models.

On the other hand, the gear plant at Chakan, which was set up in 2011, is spread over a 2,780m<sup>2</sup> area, and makes Hypoid gears. A similar manufacturing process is followed, using forging and special steel for gear metrology and heat treatment. Here, in addition to the 50-60 factory workers, a Kuka robot is used to handle components that come out of the furnace. A Special Dry Cut gear cutting method, along with the Dana AdvanTek Process, is used to make these high tech gears.

The AdvanTek series axles are the result of an innovative design that addresses the needs of a light truck buyer. This is because it applies the luxury-car-like noise, vibration, and harshness (NVH) standards to the pickup truck, SUV and SCV categories. In essence, it offers cutting edge, emergent technologies that conserve fuel (light weighting), improve warranty and deliver world-class NVH performance.

Dana has four gear plants in the world, in India, Mexico, South Africa and the USA. The Chakan plant is a benchmark for Dana in energy conservation; since the per piece gear cutting cost is the lowest in the world. "We are very competitive on energy; we require 15-16 units of electricity, while other plants need 24-25 units. That's how we manage our costs," says Vakil. The plant runs an inventory time of 20-25 days for the raw materials, while it is just 20 days for the finished goods.

#### Working with a vision

In order to become cost-competitive, the company has taken a number of measures. They only import around 3% of raw material, and most of it comes from China, hence reducing costs. In addition to this, they work closely with suppliers, to make sure that both parties are on the same page and that costs stay at a minimum. "We realised as a group that we are an interdependent community, so my customer is not strong if I cannot be strong, and I cannot be strong if my supplier is not strong," says Kumar.

He describes how they started the VSME or Visionary Small and Medium Enterprises initiative, which is an offshoot of the Government of India's plan at the time of Dr Abdul Kalam to upgrade the manufacturing skills of the Indian community. A Japanese consultant, Professor Shoji Shiba, was brought in around the mid-90s for this purpose. Anand Group joined this initiative, which aimed at percolating to the smallest supplier. As of today, they have covered 100-150 suppliers spanning the entire country, which is about 70% of the group's suppliers.



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In a conscious effort, around 90% of the suppliers for the Chakan plant happen to be located within a span of 200kms, making communication and logistics fairly easy.

Yet, there are other challenges that stand in the way. The automobile industry recession is one of them. It has definitely hit hard. While Spicer India stood at Rs 1,150 crores in 2012, it subsequently plummeted to Rs 900 crores, but has recovered since then. "We came up this year and are forecasting about Rs 1,050 crores, which is less than the peak if you account for the interest or the time value of the money. Yet on paper we are targeting about Rs 1,300 crores, since we see that the industry is now picking up. It's been a bloodbath so far and when the market falls like this you also have to reflect that. Now the bounce back is happening; it has come back to 30%, but that 30% is from the lower base. It still has to grow by another 40% to come to where we were at the original level, which we foresee will happen by 2017-18," says Kumar, optimistically.

With all eyes peeled on the automobile sector, one can only hope that his words ring true. ■

7. Vakil has been at the factory since its inception and mentors all the new employees.