



MACHINE TOOLING

WESTERN QUALITY, ASIAN PRICES

INFLOW SYSTEMS

Pune is a well-known Indian automotive hub where important companies like Tata Motors, Bajaj Auto and Mahindra have their manufacturing plants. On the other hand Pune is also home for many successful companies from diverse industrial sectors. Such an example is EPS Worldwide, a manufacturer of automatic wave soldering machines for PCBs and its sister company, Inflow, which manufactures welded assemblies and also offers laser cutting services.



RAPID GROWTH

EPS was founded in 1990 by Atul Limaye who is still one of the directors of the company along with his brother-in-law Avadhoot Joshi, and cousin, Sunil Jog. Limaye (his first name Atul literally means unparallel) told us the story of EPS. Having worked for some time with electronic companies in the Pune area, he decided to start his own business to design and manufacture wave soldering machines. The company was started in a small shed with four employees. In a short time the product range was expanded to other systems used in the manufacturing process of PCBs, and the importance of the EPS brand grew. They also received some awards for indigenous technological development.

Inflow System was established in 1999, in the rear half of EPS's shed, to produce lasercut sheet-metal parts for machines manufactured by EPS. A laser sheet cutter was purchased soon after and since the captive load was less than the capacity of this machine, it started offering laser sheet cutting services to other companies from different industrial sectors. "Even if a customer comes to us with a small volume requirement, we are ready to serve him", explains Limaye. This was the winning strategy because the company started its growth immediately. The growth in demand resulted in the purchase of a second laser sheet cutter in 2000, and even today the same philosophy is fueling the growth of the company. In 2002 EPS built and moved into a new building, and Inflow moved to a new location in 2008. More laser sheet cutting machines were added, and at one time they had five of them.

A turning point came about for EPS 10 or so years ago when some western OEMs (USA, England and Germany) from the same sector of activity approached EPS with a proposal to manufacture their machines in India and export them worldwide. EPS grabbed the opportunity and started manufacturing machines for these western OEMs, while continuing to manufacture machines under their own brand. The machines manufactured for OEMs are directly shipped from EPS to the final users.

The technical capabilities of EPS are appreciated by these OEM customers to the extent that now EPS not only manufactures their machines but sometimes is asked to upgrade their older models from the technological viewpoint,

as well as the design standards/regulations viewpoint. Now EPS is an OEM Machine supplier for Germany, US, Britain and other European Companies.

Today EPS sells about 30-40% of its production in the domestic market while the rest of it is exported all over the world. "We are aware that we have good quality products capable of being competitive in terms of specifications and performance, not only in India, but also abroad" explains Limaye. "And so we participate in various international exhibitions". Today EPS has 30 employees and a revenue of about 1.5 M€.

ONE MACHINE FOR TWO SECTORS

Inflow has always been processing tubes for EPS that are used in the fabrication of tubular machine frames. Until recently, even if the sheet metal components were lasercut, the tubes were processed using traditional methods. The decision to buy ADIGE-SYS's LC5, a combo laser cutting machine for tubes and sheet metal, has radically changed this situation, and in fact, it was their first step in the world of laser tube processing. "In our area, there are quite a few laser sheet cutting machines and some of them are equipped with a rotary axis for tube cutting. Some tests for cutting tubes on these machines were carried out by different users, but the results were not good enough from a precision viewpoint as well as from an economical viewpoint. It was simply not a competitive solution; the rotary axis is a toy and it can't deliver the results like a real industrial system", states Limaye.

In fact, ADIGE-SYS's LC5 is a combination of two completely automatic laser cutting systems; one for tubes and one for sheet metal. The combination has exactly the same performance in terms of cycle time, or in other words cost per piece, as there are separate dedicated systems for tube and sheet metal. "Before purchasing the LC5, we had a long discussion with another BLM GROUP customer who has a similar system. We considered his experience, and then I also visited ADIGE-SYS to see the LC5. The overall considerations convinced us to decide in favor of buying the LC5", explains Limaye.

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The machines for the electronic industry are going through a very competitive phase. The main competition is coming from Asia (mostly from China), and one can only win in such a situation if one can offer "Western" quality at a price that is comparable to Asian prices. For

this reason, EPS/Inflow opted for a modern machine equipped with the latest laser technology in order to have higher performance at a reduced operating cost.

"We decided to go for a fiber laser to have higher cutting speeds and at the same time lower electrical consumption and thus, lower operating costs", says Limaye. "Most of the material that we use is of low thickness, and cutting speed becomes an essential variable to be competitive in the market, whether it is sheet metal or tube."

The workload at Inflow is typically that of a job-shop, with small batch quantities and a lot of variety. Every year EPS alone manufactures a total of 500 machines of various models, and in such case, laser becomes an essential component of efficient operations. The capability of laser tube cutting allowed them to have the same advantages such as flexibility and productivity on tube processing that they had been enjoying with sheet processing for years. On the other hand, it allowed them to widen their offerings in terms of processing capabilities, which helped them to strengthen their relationship with some of their existing customers, and win some new customers.

"One of our customers manufactures fitness equipment and he asked us to cut tubes for his tubular structures. When we started supplying him laser cut tubes, he could increase his weekly production from 4-5 structures to 40-50 structures; an eight to tenfold increase", says Limaye and continues. "Once a customer sees the advantages offered by laser cut tubes, he does not turn back-he wants all his tubes to be laser cut."

The laser tube processing really offers significant reduction of cycle times and thus, cost reduction of the entire manufacturing process. Just think of a "cut and bend" technique, or various self-locking joint configurations that can be easily programmed on all the BLM GROUP Lasertube systems. These techniques simplify assembly of structures, reduce the possibility of errors and improves the welding quality, reducing the time required for welding. These aspects were confirmed by Limaye.

"Before getting the LC5, it would take 2-3 days to build one of our machine frames. Today we assemble 6-7 frames in a day."

This was achieved by appropriately modifying the original frame designs to exploit the advantages of Lasertube cutting to its maximum extent. It was an easy operation because ARTUBE can directly import 3D structures and automatically generate cutting programs for the LC5.

NOT ONLY TUBES

The LC5 replaced two older laser sheet cutting systems. Even if it opened new doors to tube cutting opportunities, its main task is still sheet cutting. It is extremely fast on thin sheets making it competitive in the marketplace. All the thin sheet cutting is carried out on the LC5 by default. As far as tubes are concerned: “If the things go as they are going now, it is quite possible that in the not so distant future we may buy a new machine dedicated for only laser tube cutting”, says Limaye.

The modernization of production systems is a MUST, even in India, because it is always more and more difficult to get skilled workers

and the manpower cost is going up rapidly. In these conditions, automation of production systems is not to be considered a luxury, but a necessity.

“Modern manufacturing systems not only offer a better work environment but they are also an important element to attract and retain qualified manpower”, points out Limaye, who is extremely sensitive about the retention of qualified workers.

The use of laser cutting for cutting tubes and sheet metal offers interesting opportunities in the automation of light to medium fabrication, starting with robotic welding. Considering these opportunities and the ever increasing demand for finished or semi-finished assemblies, Inflow has decided to build additional factory space to offer fabrication services as well.

To purchase a combined laser cutting machine capable of cutting tubes and sheet metal was an entrepreneurial risk that Inflow’s owners have taken. It has started showing promising results and Inflow feels confident that this system will help them to achieve their 20% annual growth target for the next few years.



SHEET & TUBE ONE CHOICE, TWICE THE OPPORTUNITY



The LS5 laser for sheet also becomes a laser for pipes after attachment of the pipe module. It is actually a dual unit, capable of loading, cutting and unloading pipes, completely automatically.