Something precious in the bag

Titan’s automated diamond-bagging machine eliminates errors, saves on labour and time, and ensures a much smoother process than its manual predecessor, not to mention a business opportunity that in theory should rake in $1 billion

The background

Diamonds are forever, and so are the problems that arise when they are ‘bagged’ physically, which means by hand. Diamond bagging is the process that takes place in the jewellery industry after the precious stones are grouped on the basis of their size, clarity and colour. The diamonds are counted and then bagged, according to product requirements, for any given pattern of jewellery.

This is a task where skilled employees work with dextrous hands, but the probability of errors creeping in is ever present. Add to that a variety of other problems: inaccuracies in the counting, sorting and bagging of the stones; any increase in demand means putting more skilled people on the job; and the nature of the job results in employees suffering from back pain, eye strain and fatigue. Add up all of these issues and you get a manufacturing process that is far from smooth.

The innovation

Titan Industries is the owner of Tanishq, India’s fastest-growing jewellery brand. Moving from the manual diamond-bagging system to an automated diamond-bagging machine was more than an experiment for the company, and its jewellery and machine building divisions worked in tandem to design and implement a solution that is far superior to the existing, and widely used, by-hand process.

Titan’s automated bagging process uses robots and sensors, with the supply-chain requirements of boutiques and other customers being routed through an ERP system and connected to the bagging equipment through custom-made software. The diamonds are picked, weighed and bagged automatically for fixing on the jewellery.

The team behind the innovation started work on the project in 2008. The big idea was to create a machine that could pick and bag single diamonds. In the early days, the pins employed to pick up the diamonds would wear out frequently. Modifications were made to the machine and, two years after they had begun the effort, the Titan team had their innovation.

The payoff

The automated diamond-bagging machine is the first of its kind in the industry. Having the machine, and the automation that it provides, has translated into Titan being able to redeploy employees who would otherwise have been involved in the manual-bagging process.

There are other benefits that Titan can now count on. The estimated business opportunity for the company’s machine-building division from the automated diamond-bagging machine is a whopping $1 billion, what with some 10,000 more such machines required by 2014-15 to meet global demand.

The Tata Innovista initiative has, in the circumstances, been the perfect platform for the company and its people to give their creation more than just the mandatory 15 minutes in the limelight — and to shine as brightly as the diamonds they intend to bag.