

Better accuracy enables Godrej to redefine quality norms and help reduce costs

Accuracy and on time delivery of projects are key requirements for the tooling industry. Godrej Tooling Division (Godrej) relies on Renishaw solutions to save time, money, reduce scrap and achieve a high level of accuracy.

Company background

Godrej is a household name in the Indian market, with international presence in The Netherlands, Saudi Arabia, the UAE, Oman, China, Vietnam, Malaysia and Singapore. Founded in 1935 as a captive tool room, the Godrej Tooling Division commenced commercial operations in 1993 and manufactures press tools, die casts and special-purpose machines, jigs and fixtures. With revenues exceeding INR 1.2 billion, the company caters to the tooling needs of Toyota, TATA, Honda, GM, Maruti Suzuki and Siemens, amongst others.

Godrej, India's largest tooling solution provider, has unsurpassed capabilities in the manufacture of complex dies, with 15-20% of its products being exported around the world. As part of its Total Productive Maintenance (TPM) initiative Godrej follows PQCDSM (Productivity, Quality, Cost, Delivery, Safety, and Morale) and Kaizen guidelines. The main objectives of its TPM initiative are to reduce down time to zero and ensure on time deliveries. Therefore, maintaining the accuracy of its equipment, including CNC and EDM machines, with high precision calibration equipment is essential.

Experience with Renishaw's precision

In the early days, Godrej's evaluation of accuracy was difficult to obtain. National Aerospace Standard NAS979 tests (standardised cutting tests for CNC milling machines) were performed by a highly skilled expert as part of machine commissioning. These tests were problematic and time-consuming to carry out. In 1996 Godrej purchased Renishaw's ML10 laser system after hearing about the quality of the product and was impressed with its accuracy and reliability. Furthermore, Godrej was surprised how simple it was to use and avoided expensive errors common in the NAS test.

Although the ML10 only measured 9 parameters, as compared to 13 in NAS tests, the improvement in results quality was more important than the parameters left undiagnosed. The data reading was instant and easy to analyse. Godrej soon realised that the Renishaw laser system would save time, money and reduce scrap. Its accuracy prompted Godrej customers to specifically request ML10 certification. Mr S M Nayak, Senior General Manager at Godrej, explained, "The product is rugged and stable, we only call Renishaw for upgrades. There has never been an instance of product failure."

Godrej has since upgraded to Renishaw's XL-80 laser system designed with simplicity and ease of use in mind, reducing the need for a highly skilled expert. Mr Nayak says, "Renishaw's service is second to none, and they have an immediate response time. We requested training and were delighted that in a week the training was complete." The XL-80 laser measurement system offers high performance calibration for motion systems, including CMMs and machine tools.

The journey continues

As part of its expansion, Godrej Machine Tools purchased multiple CNC machines in its tooling division. This posed new challenges as the machines needed to be tested for additional parameters like circular interpolation and drive tuning. Once again Godrej turned to Renishaw and found a solution in the QC20-W telescoping ballbar system which identifies machine errors easily with a high degree of accuracy. It directly determines servo mismatch, geometric accuracy, squareness, positional errors and reversal spikes in all 3 planes (xy-yz-zx). Since the adoption of QC20-W ballbar testing Godrej's down time and rejection rates have reduced to 5%.

Delivering results

In the tooling industry quality parameters are critical and customers expect a product life span of 10 years. Through its adherence to the highest quality and accuracy standards, Godrej has been able to deliver products with a life span of 125,000 cycles, far ahead of the industry norm of 50,000 cycles.

Godrej's customers in defence, aerospace and nuclear application industries request audits during the manufacturing process to ensure quality measures are being maintained, and will insist on seeing ballbar certificates for the machines. Mr Nayak explains, "Renishaw has helped Godrej to redefine quality norms, boost in-house capabilities, competence and confidence and help reduce costs."

Beyond savings to revenue generation

Die and mould customers choose Godrej because of the long life span of its dies resulting from tightly controlled quality parameters. The customer demand for high quality and precision measurement prompted the company to provide laser and ballbar certifications. Now Godrej offers calibration services to others, generating an additional revenue stream. Godrej's manufacturing facility is equipped with state of the art CNC, EDMs and jig boring machines. Mr Nayak states, "High precision calibration of these machines with a Renishaw laser or ballbar is key to quality and reliable performance."

For further information visit www.renishaw.com/calibration