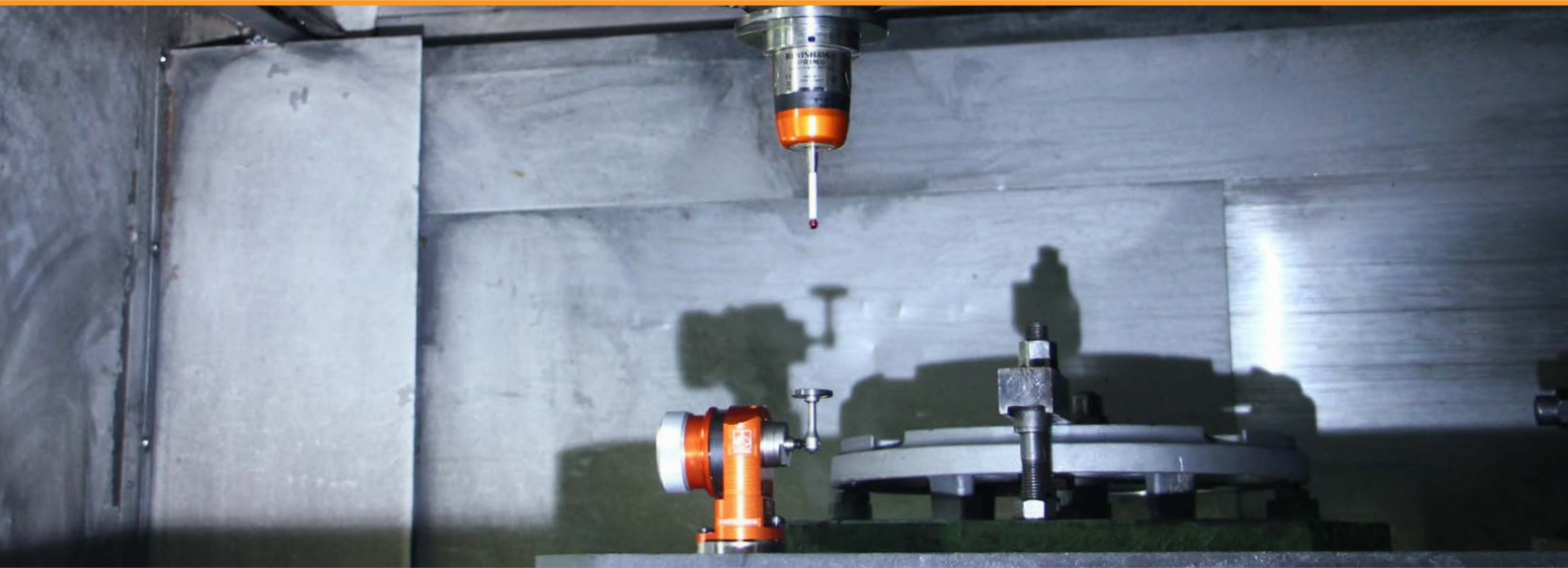


The Primo™ system reduces part set-up time, eliminates scrap and maintains tight tolerances for Victory Precisions



Customer:

Victory Precisions Pvt. Ltd.

Industry:

Precision manufacturing

Challenge:

Maintain an accuracy of 15-20 microns and reduce non-productive time while machining aluminium die-castings and large machined engineering components.

Solution:

Automated on-machine part setting, part inspection and tool setting enabled by the Renishaw Primo™ system.

Victory Precisions Pvt. Ltd., Pune, India, manufactures aluminium die-castings and large machined engineering components for companies in the oil and gas, automotive, agricultural and infrastructure industries among others. It is critical to maintain an accuracy of 15-20 microns on these components and reduce non-productive time while machining.

The Renishaw Primo™ system has helped Victory Precisions to achieve this accuracy, as well as reducing part setting time and increasing productivity.

Victory Precisions - the one-stop solution company

Victory Precisions was established in 2006 and supplies components to well-known companies such as ABB, Alfa Laval, Atlas Copco, Cummins, and many others across the globe. The company employs 165 engineers, designers, operators and other staff, and registered a turnover of INR 250 million in the financial year 2013-2014.

The machine shop has 14 twin pallet horizontal machining centres (HMCs), three vertical machining centres (VMCs), two CNC vertical turning lathes machines (VTLs), turning centres, co-ordinate measuring machines (CMMs) and comprehensive

inspection facilities. It is an ISO-TS certified company and a proud Zero PPM supplier to all of its customers. The company is a one-stop solution for its customers as it has the facilities for making dies, patterns and castings, as well as an extensive machining capacity.



While it is revolutionary, installing the Primo system is also very easy. Renishaw installed it within one and a half hours at Victory Precisions and the operators were trained to operate the probe in just three hours using GoProbe. This combination of software, self learning material and reference tools is standard with the Primo system. Requiring no previous experience of probing, GoProbe makes the probe system easy to understand and use.



Victory Precisions Pvt. Ltd. (India)

The Primo system - a big saver for Victory Precisions

Victory Precisions was incurring huge losses in terms of time and material until it started using Renishaw's Primo system. The Primo system, which consists of the Primo Radio Part Setter, Primo Radio 3D Tool Setter and Primo Interface, is available at a competitive price and delivers a fast return on investment. It enables automated on-machine part setting,



The Primo system locating positions on an endbell component



Mr. Sagar Kaushik, Director of Victory Precisions

part inspection and tool setting, helps to eliminate manual setting errors, and improves accuracy and part conformance whilst reducing non-productive time and scrap. This leads to increased productivity, improved quality and increased profits.

The Primo system is easy to use, simple to install and represents a low initial financial outlay. Additionally, its exclusive enhanced warranty offers users peace of mind. The innovative Primo Credit Token system offers users the flexibility to 'pay-as-you-probe'. Its 6-month renewable tokens allow unlimited use of the Radio Part Setter and the Radio 3D Tool Setter within this period of time. The credit tokens are also available as an upgrade to enable unrestricted continuous use.

A key benefit is the elimination of the need for extensive G-code knowledge. The system is supplied with GoProbe, an innovative 'all-in-one' software package that simplifies part setting, tool setting and calibration. Simple, single-line commands are used instead of multiple lines of code which further eliminates the need for any special training.

Selecting the best

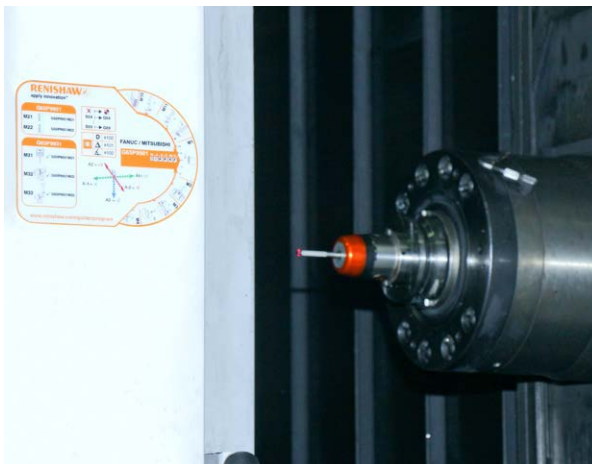
"We were introduced to Renishaw in 2007, when we decided

to install probes in our manufacturing unit. The selection parameter was to go with the best supplier and Renishaw, being best in class and category, was a natural choice for us. Today, we have seven different probing systems from Renishaw," said Mr. Sagar Kaushik, Director of Victory Precisions.

The company felt that the Primo system best suited its various applications and installed it on one of its HMCs. "While it is revolutionary, installing the Primo system is also very easy. Renishaw installed it within one and a half hours at Victory Precisions and the operators were trained to operate the probe in just three hours using GoProbe. This combination of software, self-learning material and reference tools is standard with the Primo system. Requiring no previous experience of probing, GoProbe makes the probe system easy to understand and use," says Mr. Kaushik.

Time saved is money earned

At Victory Precisions, the Primo system has helped to save time and eliminate scrap. When machining a crankcase – a critical product for any engine – some casting process variations are often present. At Victory Precisions, the



GoProbe quick-reference tool and Primo Radio Part Setter



Machined crankcase casting

component would be set up on the machine and bore alignment would be performed manually using dial gauges, in order to ensure equal wall thickness and avoid future failures. Before the Primo system was installed this part setting process took two and a half hours, causing machine downtime. With the Primo system, the on-machine alignment of a crankcase takes just 5 to 10 seconds, saving significant time and costs. In addition, scrap is eliminated – a saving of INR 45,000 per component – and precision is guaranteed.

When machining a cylinder – an engine component and a high-performance part – concentricity is critical. Once the boring operation is performed, checking of concentricity is essential and previously it was necessary to take the product to another inspection facility, which led to a delay in the machining cycle. This entire process took one and a half hours. The Primo system enabled the inspection of this parameter to take place on the machine itself, and in just 30 seconds, without a gap in the machining cycle.

A bonnet – an oil and gas industry component – is very heavy and the cost of the raw forging is high. After machining the diameter and other operations are performed on a VTL, the component is set to within an accuracy of ± 10 microns of the centre axis on an HMC, for middle hole boring, PCD holes and threading operations. This alignment process was previously carried out using a dial gauge and took around two hours. After installing the Primo system, it took a minute to perform this alignment, resulting in a significant time-saving and increased confidence in the accuracy of the alignment.

The Primo system also saves time when machining endbells, used in genset engines. The casting itself comes with a notch, which is used for locating positions of the holes for drilling and tapping operations. Failure by an operator to locate this particular notch for further machining can lead to many rejected parts. The Primo system can accurately and repeatably probe the notch, allowing the machine to locate other features using this data. Previously this process took 5 to 7 minutes and there was a possibility of rejections; now, it is a matter of just 20 seconds, with guaranteed results.



Concentricity is critical during machining



Bonnet component used in the oil and gas industry

Another critical component where the Primo system has helped in maintaining accuracy and reducing rejections is the air intake manifold used in automobile engines. This component comes in different sizes and can be very long. When a manifold is cast, there is normally a distortion of 1 mm to 2 mm. Correct alignment is very important when machining, so that bored and clamping holes are machined as per the drawing. The Primo system probes port holes on



A machined endbell as used in genset engines



The Radio Tool Setter and Radio Part Setter on-machine at Victory Precisions Pvt. Ltd.

the casting and aligns the component perfectly. It takes wall thickness variations into account, leading to a total time saving of ten minutes per component and the elimination of scrap.

Time saved is money earned

Mr. Kaushik is clearly impressed with the Primo system: “The software is very simple; the operators using the Primo system can be trained in 30 minutes and find it very easy to use this product. The advantage is its probe-on-probe calibration and the credit token system, which is a unique payment system that Renishaw has offered. We do not have to pay everything at one time and as such, higher initial investment is avoided. We can buy credit tokens as and when we want to use Primo. It is like a prepaid system that is a low cost solution for SMEs.”

The Primo system comes with Primo Total Protect cover, a comprehensive warranty scheme which safeguards the probes against any accidental damage.

“Primo is surely recommendable for any shop floor and is beneficial to each and everyone,” Mr. Kaushik concluded.



The Primo system: Radio Part Setter, Radio 3D Tool Setter and Interface

For more information and to watch the video, visit www.renishaw.com/mtp

Renishaw plc
New Mills, Wotton-under-Edge
Gloucestershire, GL12 8JR
United Kingdom

T +44 (0) 1453 524524
F +44 (0) 1453 524901
E uk@renishaw.com
www.renishaw.com

For worldwide contact details, visit www.renishaw.com/contact

RENISHAW HAS MADE CONSIDERABLE EFFORTS TO ENSURE THE CONTENT OF THIS DOCUMENT IS CORRECT AT THE DATE OF PUBLICATION BUT MAKES NO WARRANTIES OR REPRESENTATIONS REGARDING THE CONTENT. RENISHAW EXCLUDES LIABILITY, HOWSOEVER ARISING, FOR ANY INACCURACIES IN THIS DOCUMENT.

© 2017 Renishaw plc. All rights reserved.

Renishaw reserves the right to change specifications without notice.

RENISHAW and the probe symbol used in the RENISHAW logo are registered trade marks of Renishaw plc in the United Kingdom and other countries. apply innovation and names and designations of other Renishaw products and technologies are trade marks of Renishaw plc or its subsidiaries. All other brand names and product names used in this document are trade names, trade marks or registered trade marks of their respective owners.



H - 2000 - 9015 - 01

Part no.: H-2000-9015-01-B
Issued: 01.2017