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SHINING 3D
RobotScan E0505

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HANGZHOU SHINING 3D TECH CO., LTD.

Shining 3D provides a wide-range of 3D digitizing and printing solutions including scanners, printers, material, design and manufacturing services, as well as a fully-established network cloud platform. By delivering 10+ years of professional 3D digitizing and printing technology, Shining 3D owns comprehensive 3D application experience. It is an international, influential leader with well-established 3D ecosystem.

RobotScan E0505 enables automatic batch inspection of car parts

Case Overview: RobotScan E0505, a fully automatic 3D scanning system, was utilized by a company to perform the automatic batch inspection of cooler covers of the car engine.

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SHINING 3D RobotScan E0505

Enables automatic batch inspection of car parts



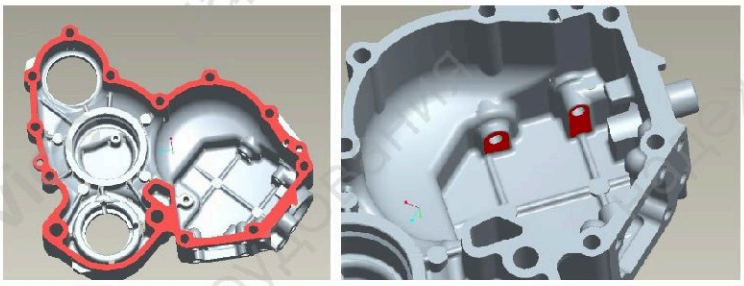
Background

The traditional method is to use a coordinate measuring machine (CMM) to conduct random inspection over a batch of parts in the mass production of metal parts. However, this kind of inspection is disadvantaged in a very low efficiency and incapable of improving the production process. Thus the company was urgently looking for a method that could inspect 120,000 parts in one year and meet the high-accuracy requirement of measurement.



Inspection Requirements

Inspection items included planeness, hole aperture, the distance between two holes, location degree, and four sides lateral distance, etc. The precision was required to reach 0.025mm, and extremely high repeatability shall be realized.



(Inspection requirements for different positions)

Plan the inspection process

The engineer shall design the inspection process prior to batch inspection. The engineer firstly fixed the workpiece with markers on the turntable and then set the motion path, scanning angle, and other scanning parameters of the mechanical in the software. After all things set up, the first part could be scanned.



(The cooler cover to be inspected)



(The engineer designed the inspection process)

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(The first part was scanned to make the data template)

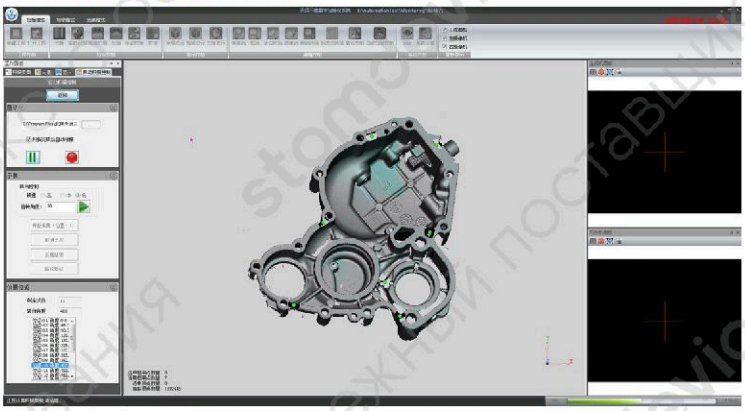
Upon completion of scanning and inspection for the first part, 10 key dimensions were obtained. And then imported the 10 key dimensions into Geomagic Control X software to make an inspection data template.

Batch inspect and generate reports

The engineer began the batch inspection for parts after the template was done. The average scanning time per part was about 1.45mins, while it cost almost 20min through CMM method.



(RobotScan E0505 at work)



(3D data displayed in software)

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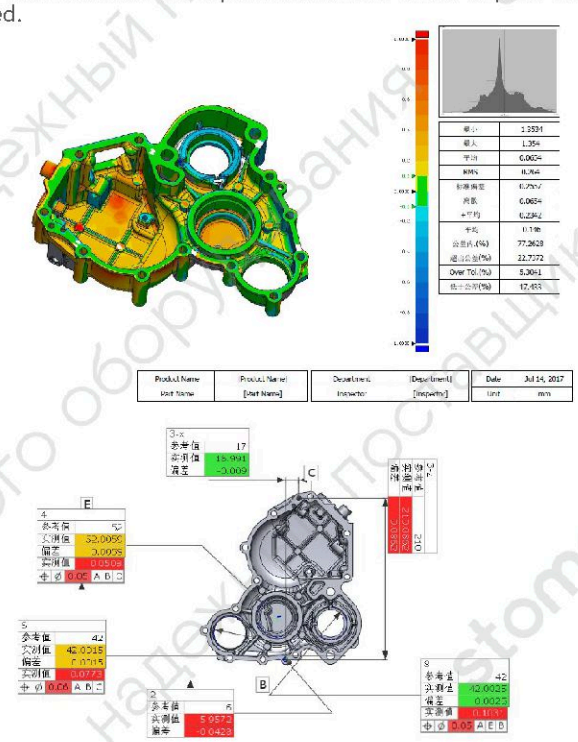
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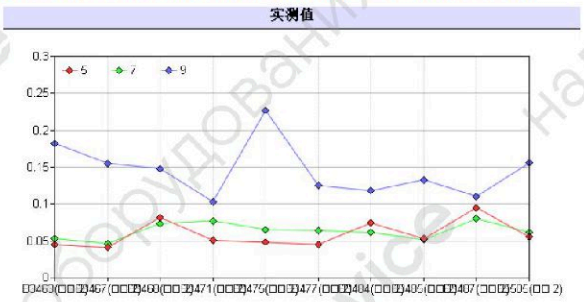
RobotScan E0505



Upon completion of inspection over every part, a report of the part would be automatically generated in Geomagic Control X software. Once the inspection of all part was finished, an error variation trend report could be generated in software. The user optimized the production process flow based on the report where main errors of parts frequently appeared.



(Inspection report of a single part during batch inspection)



(Trend report for batch inspection of parts)

Advantages

High efficiency
Using the RobotScan E0505 automatic scanning system, the scanning time per part was turned from 20mins to 1.45mins, which made it possible to inspect 120,000 parts in a year.

High precision
Meet the requirement of 0.025mm from the customer.

Save manpower
As a fully automatic scanning system, there was no need to measure manually. So it saved the labor cost as well as avoiding the errors caused by human factors.

Optimize the production flow
The production process flow could be improved and optimized timely base on the batch inspection report, thus increasing the qualified rate of the product.

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SHINING 3D

SHINING 3D was founded in 2004 and was listed in the New OTC (Over-the-counter) Market on Aug. 8th, 2014 (stock: 830978). Shining 3D is China' s first OTC company in the 3D digitizing and printing industry and it is the established leader specializing in the advancement of a 3D digitizing and printing ecosystem.

As of the 31st of December 2015, SHINING 3D submissions for patent protection included: 64 utility patents for inventions, 54 utility model patents, 27 appearance patents and 55 software copyright submissions.

SHINING 3D has wide-ranging influence in the 3D additive manufacturing community such as:

1. Being the first drafting unit for the Industrial Standard for the National White Light 3D Measurement System (3D Scanners)
2. Selected as the Vice-presidential facility for the Zhejiang Industrial Design Association
3. Provincial Institute of 3D Digitizing and 3D Printing Technology
4. Vice-director facility for the Chinese 3D Printing Industrial Alliance
5. Director facility of Zhejiang 3D Printing Industrial Association

SHINING 3D has established 3D print service centers in multiple industry categories that enable the distribution of additive manufacturing technology at home and abroad. SHINING 3D empowers the growth of 3D digitizing and printing technology through its ongoing alliance with such renowned universities as; Tsinghua University, Zhejiang University and the South China University of Technology.

Contact us

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