Industrial 3D Measurement Solution

HSCAN 3D SCANNER

Rebuild your 3D world

Hangzhou Scantech Co., Ltd.

Content

HSCAN300 3D Scanner Technical Proposal

1.Company introduction

Hangzhou Scantech Co., Ltd is a high-tech enterprise specialized in the development, manufacture and sale of intelligent visual inspection equipment. As one of the most professional 3D digital equipment supplier, Scantech has been granted and assigned numbers of technological patents.

R&D team developed series of 3D digital equipment with self-owned intellectual property rights such as handheld laser 3D scanner, global 3D scanner, white light 3D scanner, Tracking 3D scanner, global photogrammetry system etc. Especially PRINCE series with capability of capture extreme detail and AXE series with high volumetric accuracy are global creative initiative, and gain great attention and recognition in the 3D digital field.

Furthermore, R&D team establish joint development center with Norway Metronor which is a well-known optical metrology enterprise in Europe.

2.Product introduction

2.1 Overview

HSCAN series adopts multiple beam lasers to obtain 3D point cloud from object surface. The operator can hold the device on hand and adjust the distance and angle. It can cooperate with the photography measurement system (MSCAN) when scanning the large piece object to eliminate the accumulated error and improve the volumetric accuracy.

The scanner can be conveniently carried to industrial onsite or production workshop, and do the accurate scanning according to size and shape of object.

2.2 Principle

1) Two sets of cameras on the scanner can respectively obtain the projection laser from scanned object, this laser will deform when scanner moving on the object surface, then we can calculate the linear 3D information from the laser as the distance between two cameras is accurately calibrated in advance.

2) Device identify the spatial position according to the visual marker on scanned object surface when scanning, which is used for spatial position conversion.

3) The 3D position information where the laser goes through can be acquired by utilizing the linear 3D information and relative spatial position when scanner moves, thus form the continuous 3D information.

2.3 Feature

High precision

-accuracy is up to 0.04mm to ensure accurate data for 3D measurement

Self-position

- no need for extra position device

Dynamic measurement

-secure full freedom between scanner and scanned object

Real-time visualization

-Point cloud without layering, automatically generate 3D solid graphics (triangular mesh)

Anti-interference

-accuracy is insensitive to unstable environment, work normally in direct sunlight

High adaptability

-easily deal with shining or black surface, mostly imaging enhancement is unnecessary.

Wide application

-easy to scan different shape of object from egg size to plane

Easy operation

-handheld measurement

-use in narrow space such as cockpit and car interior dashboard and so on

-easy carrying with less than 1kg weight

Voice reminding

-ensure to operate at best working arrange

Long distance work

-support long distance work with Gigabit Lan

2.4 Parameter

Chart1 HSCAN300 technical parameter

Type	HSCAN300
Laser source	3 parallel laser lines
Weight	0.95kg
Dimension	315*165*105mm
Scan deep hole	Not support
Hyperfine scan	support
Measurement rate	205,000 measures/s
Laser class	Ⅱ（eye safe）
Resolution	0.05mm
Accuracy	Up to 0.04mm
Volumetric accuracy	0.02mm+0.1mm/m
Volumetric accuracy (with MSCAN)	0.02mm+0.025mm/m

Stand-off distance	300mm
Depth of field	250mm
Output format	. ply、.xyz、.dae、.fbx、.ma、.obj、.asc、.stl or customized
Work temperature	-10~40℃
Interface mode	Gigabit Lan
Rapid calibration	Complete calibration within 60s
PC requirements	CPU：i7-6820HQ RAM：32G，2133MHzDDR4 GPU：NVIDIA Quadro M1000M 2GB GDDR5 Operating system：Windows 7-64 bit, Windows 8

2.5 Application

➢ Automobile manufacturing

➢ Aerospace

➢ Power generation

➢ Model manufacturing

➢ Casting inspection

➢ Construction machinery

➢ Design inspection

➢ Architecture sculpture

➢ Colleges and research institutes

3.Configuration

The production capacity of portable 3D scanner is about 300 to 400 sets per year. The accessories are adequate and can deal with the emergency situation.

Chart2. HSCAN standard configuration

Component	Quantity
3D scanner	1
Calibration plate	1
Combination cable	1
Power adapter	1

6mm reflective marker	4000
Waterproof case	1
scan software	1

4.Customer Support

4.1 Training

Our goal is to develop skills by providing flexible training according to participants' level of knowledge.

To ensure training quality and consistency, our team of experienced trainer draw on training plans with other tools to clearly explain train objectives, introduce theory, guide hands-on practice and assess student progress.

4.2 Maintance

ScanTech offer efficient service and support to ensure satisfactory solution.

We promise 1-year warranty after sale. Take advantage of worry-free maintenance and repair coverage for all of your hardware and software, we will have a plan suited to your needs while your device is under warranty.
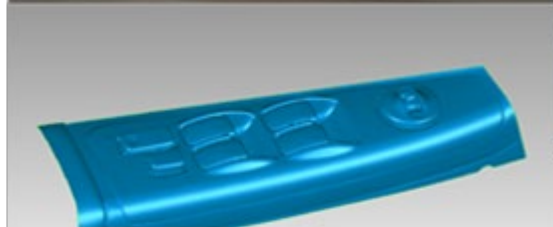
5.Application case

5.1 Car design

Redesign car

Parts optimize

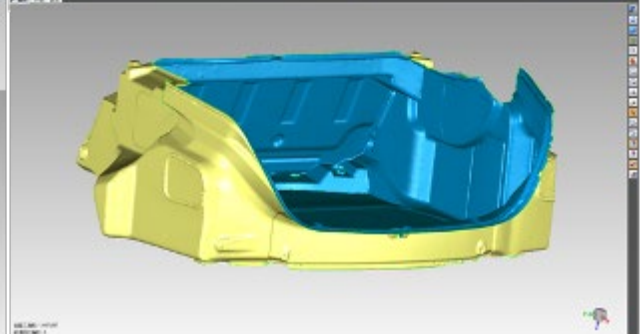**Assemle gap size analysis**
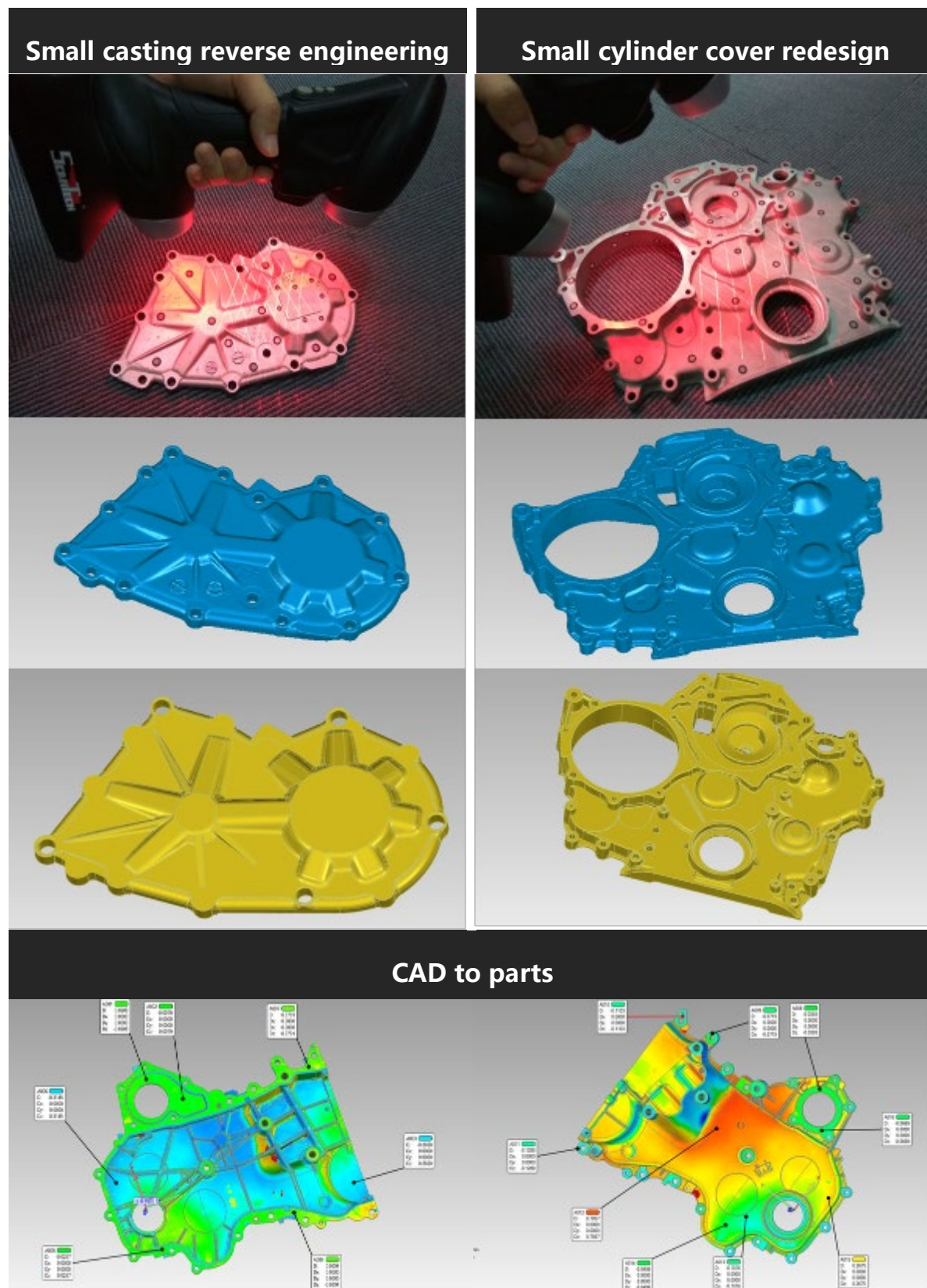
5.2 Car interior

Dashboard optimization
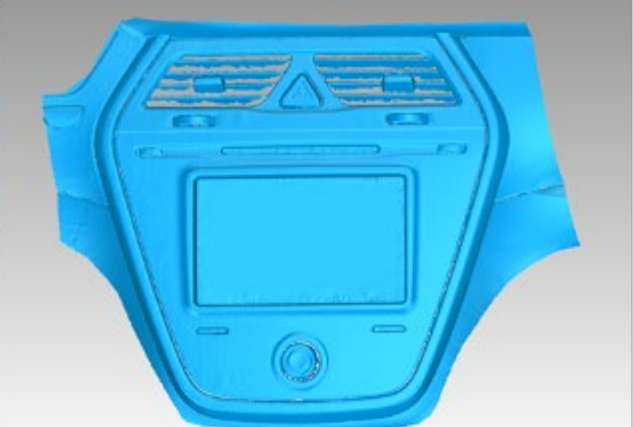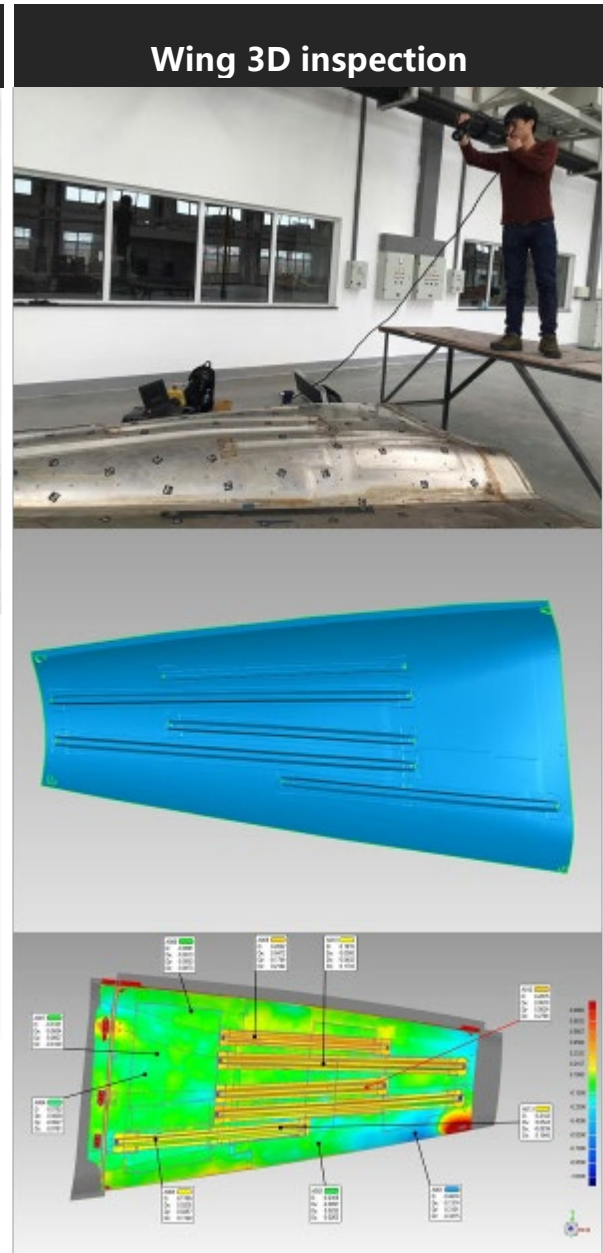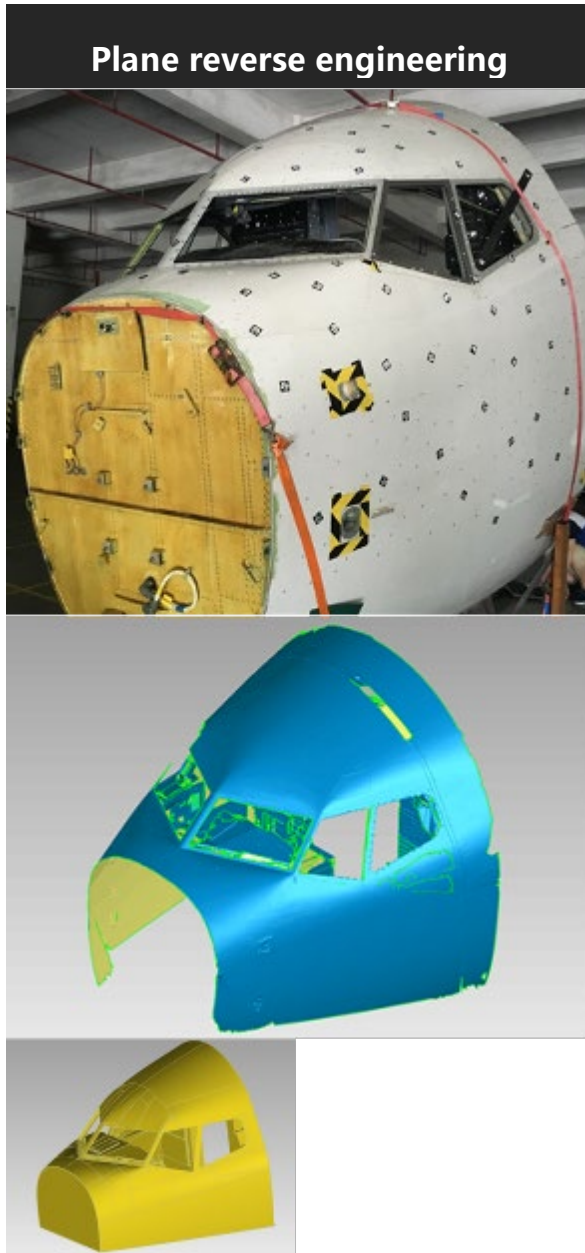
Window control table optimize
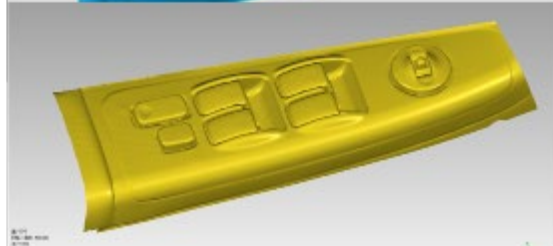
Luggage durable test

5.3 Casting molding

Small casting reverse engineering

Small cylinder cover redesign

CAD to parts

5.4 Aerospace

Plane reverse engineering	Wing 3D inspection

5.5 Rail transportation

Subway 3D inspection

5.6 Furniture

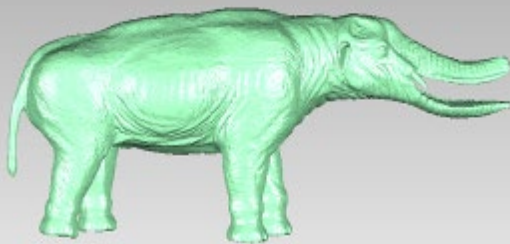| Wood carved chair modeling	Sofa 3D reconstruction
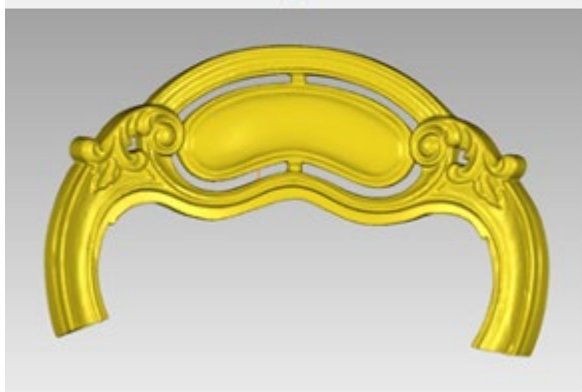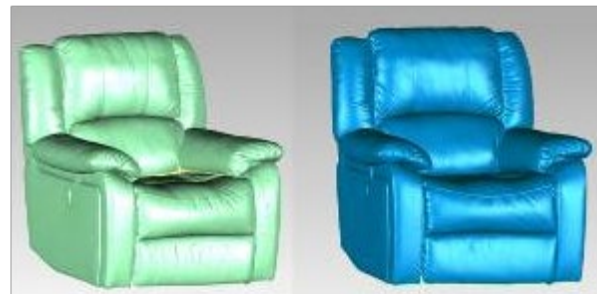
5.7 Heritage sculpture

Palaeobios 3D remodeling

Buddha 3D remodeling

For more info:

www.3d-scantech.com