Canon
SEE IMPOSSIBLE

RV1100+Option
RV1100
RV500
RV300

3D MACHINE VISION FOR RANDOM BIN PICKING

3D random bin picking is a challenging area in manufacturing industries that has perplexed engineers for years. To meet the challenge, Canon has aimed for and created the best solution utilizing Canon's leading optical and processing technologies. The installation is easy, yet the system automatically recognizes the part, determines the best pick, calculates the optimal path so that a robot can safely but surely pick and place it to its destination. It is a total solution for random bin picking on any production floor.
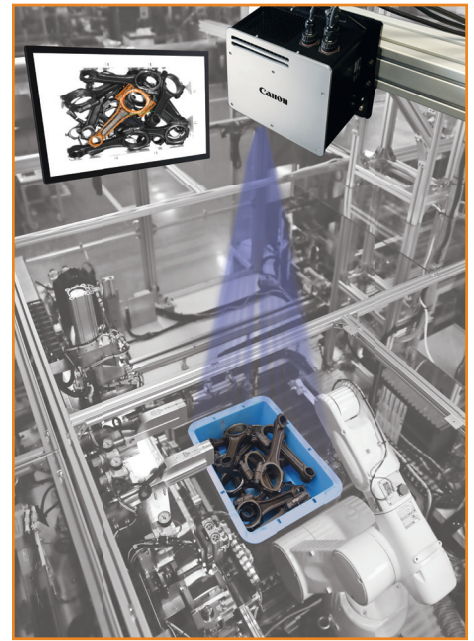
PROVEN RECORDS IN MASS PRODUCTION

LARGE
Car Door Panel
1.4x1.7m/4.6x5.6ft

PARTS THAT CHANGE SHAPE

GLOSSY
Metal Plate
Use HDR* for easy recognition of glossy parts

THIN
Lid
3mm/0.12in
Use "Recognize as Thin Work" capable of 4mm/0.16in or less (RV300)

LONG
Hexagon Bolt
320mm x Φ 16mm

SMALL
Cable Clamp
24mm/0.9in Width
Minimum size 10x10mm/0.39x0.39in (RV300)

*HDR is High Dynamic Range

OPTIONAL SOFTWARE

PARTIAL WORK PIECE RECOGNITION

Handle a large part stretching beyond the FOV or a complex shaped part by recognizing a section of CAD data.

CONSECUTIVE RECOGNITION

Accelerate the cycle by detecting the changed regions, and possibly reusing the picture.

BATCH RECOGNITION / MULTI-BIN

Handle multiple bins, or increase speed by recognizing multiple areas at one time.

SLIDER MOUNTING OPTION

Handle multiple bins by mounting the 3D vision head to a slider in horizontal or vertical position and measuring from different locations.
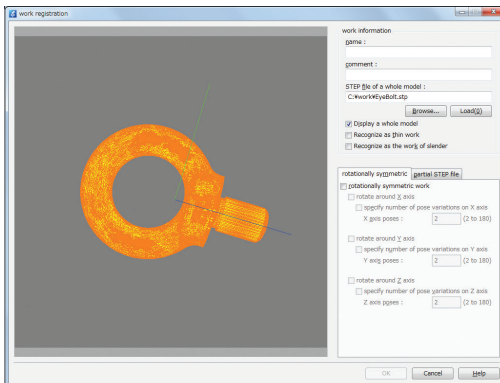
SIMPLE FLOW OF AUTOMATION

Launching the Machine Vision system into your production is easy. Setup is simple with user-friendly guided software. Simply dump the parts in a bin and hit the start button and the system searches the best pick out of the pile based on your conditions. The integrated robot picks and places the part for next process.
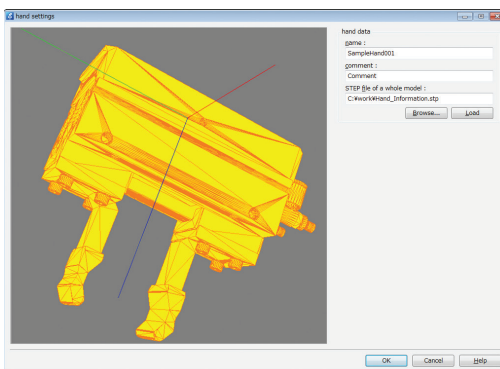
1 SETUP
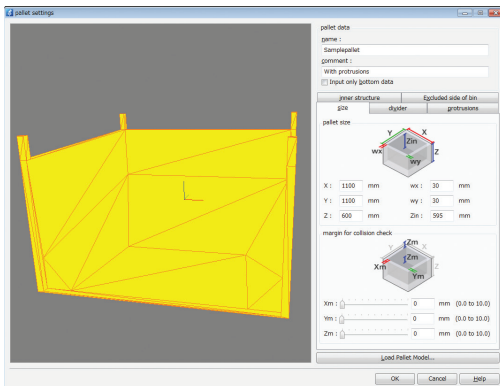
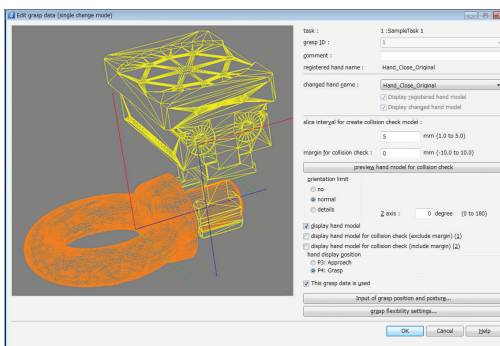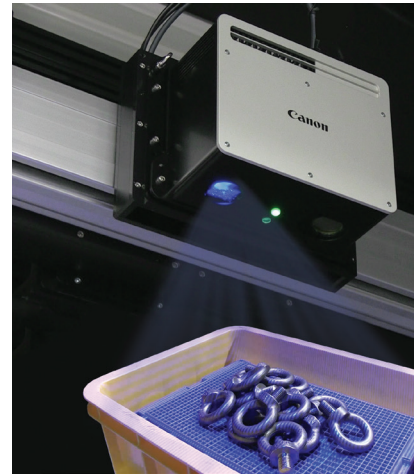**BIN**

PARTS

HAND

GRASP

2 3D SCAN — Quick process

3 RECOGNIZE — Precise CAD fitting

4 PICK — with collision check along path

Approach

Grasp
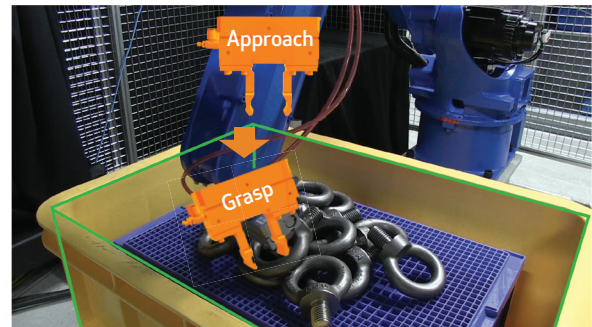
5 PLACE — No additional scan needed due to precise recognition

SPECIFICATIONS

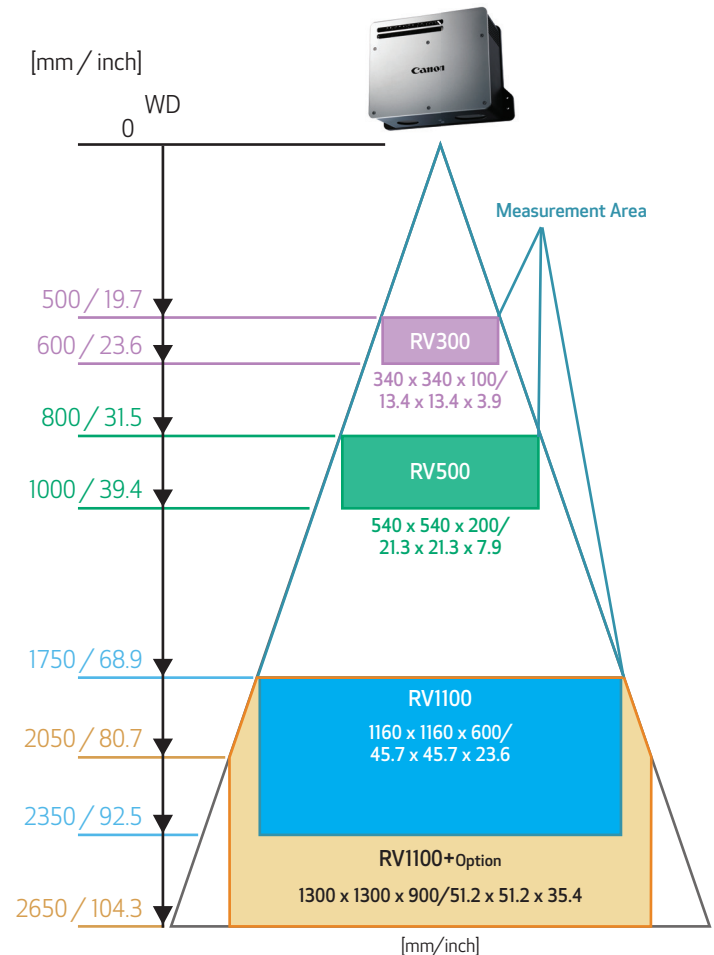|	RV300	RV500	RV1100	RV1100+Option
Measurement area [H x W x D]	340 x 340 x 100 mm (13.4" x 13.4" x 3.9")	540 x 540 x 200 mm (21.3" x 21.3" x 7.9")	1160 x 1160 x 600 mm (45.7" x 45.7" x 23.6")	See the red framed trapezoid area
Minimum recognizable part size	10 x 10 mm (0.39" x 0.39")	20 x 20 mm (0.79" x 0.79")	45 x 45 mm (1.77" x 1.77")	50 x 50 mm (1.97" x 1.97")
Recognition time	1.8 sec	1.8 sec	2.5 sec	2.5 sec
Dimension of 3D Machine Vision Head	252 x 206 x 129 mm (9.9" x 8.1" x 4.9")			
Weight of 3D Machine Vision Head	6.5 kg (14.3 lb)			
IP Rating	Equivalent to IP54			
Operating Temperature	0 – 45°C (32 – 113°F)			

SYSTEM CONFIGURATION

For PC specifications, Windows 7, 8.1 or 10 Professional base OS is required as well as nVidia GeForce GTX Graphics Card and Intel Gigabit network LAN card. Please contact Canon for the most up-to-date PC requirements.

Canon 3D Machine Vision System

PC

3D Machine Vision Recognition Software

GUI

3D Machine Vision Head

Picking Robot

Robot Controller

Programming Pendant

MEASUREMENT AREA

[mm / inch]

WD
0

Measurement Area

500 / 19.7
600 / 23.6

RV300
340 x 340 x 100/
13.4 x 13.4 x 3.9

800 / 31.5

1000 / 39.4

RV500
540 x 540 x 200/
21.3 x 21.3 x 7.9

1750 / 68.9

RV1100
1160 x 1160 x 600/
45.7 x 45.7 x 23.6

2050 / 80.7

2350 / 92.5

RV1100+Option
1300 x 1300 x 900/51.2 x 51.2 x 35.4

2650 / 104.3

[mm/inch]

Canon

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