

3D Vision Package

MotoSight3D

Proposal of MotoSight3D

Automation of bin picking work



Bin picking, which used to be impossible with robots, can be automated with the high-performance 3D vision package. Contributed to building welding lines with high-productivity and high-quality.

Features

Types of parts to be detected are widely expanded.

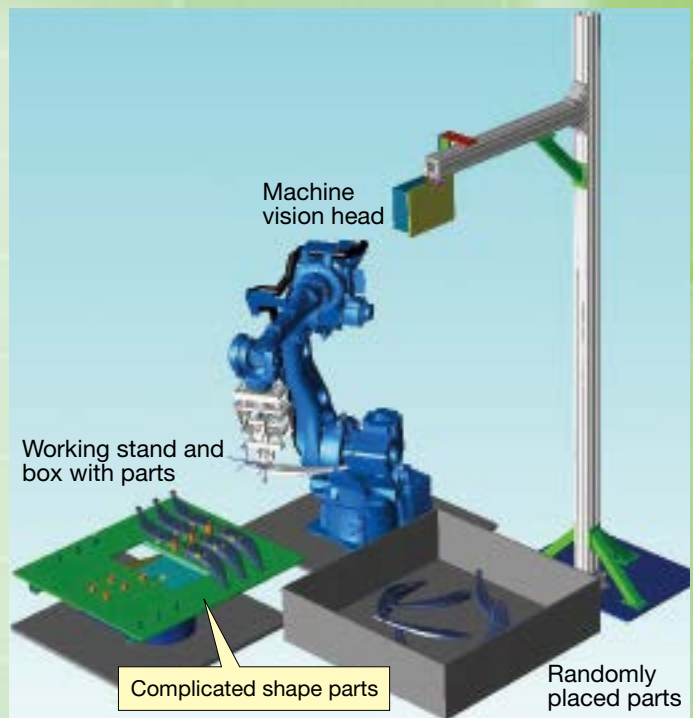
- Greasy parts with high reflection of light can be handled.
- Parts with curved surface or with complicated structure can be handled.
 - ➔ Optimal for pressed parts for automobile.
- Target parts size (approx.)
 - 10×10 mm (when using RV300) to 1,000×1,000 mm (when using RV1100)

Highly accurate detection capability

- 3D position posture (6 degree-of-freedom) can be detected with one measurement.
- Temporary placing table or the other positioning sensor is not needed.

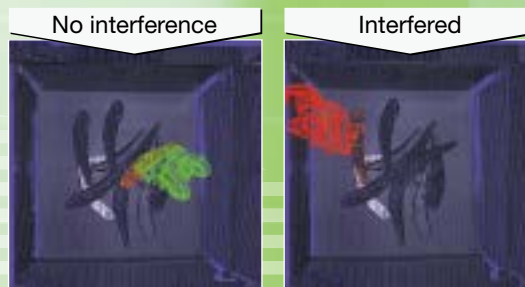
Very simple setting operation

- Workpiece can be registered by inputting the CAD data and photographing the piled parts.



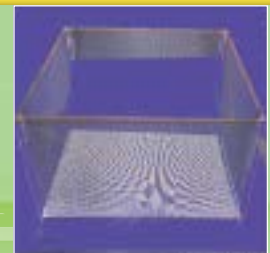
Helpful Features

Interference check function



Detects interference between the hand and the workpiece or between the hand and the pallet, and then excludes them from the picking candidates.

Pallet measurement function



Even if the setting position of the pallet is out of position, measurement can be performed.

Halation handling

Halation* caused by the gloss of industrial parts or adherence of oil can be resolved by the automatic exposure time adjustment function.

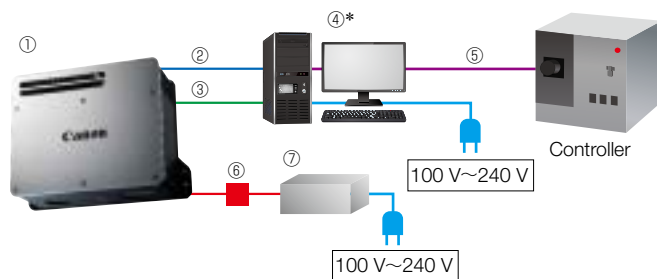
* Measurement data failure caused by the gloss or light reflection

Main applications

Nut projection process, Feeding process to processing machine, Taking out and arranging process from pallet, etc.

MotoSight3D

System Configuration



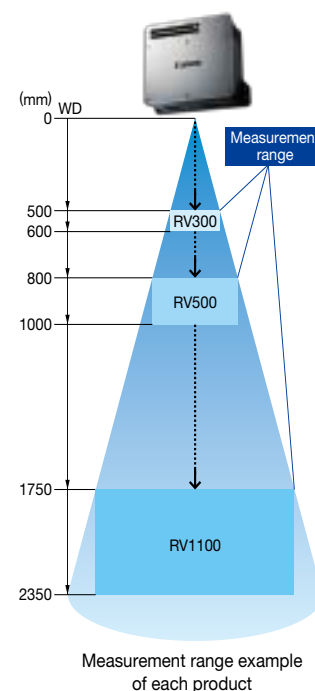
*: Please contact us if you are planning to use other PCs (general PCs, etc.). We will provide information on how to select PCs.

Device Composition Table

NO.	Name	Specification
①	Machine Vision Head	Select from RV1100/RV500/RV300
②	Communications Cable (PC - sensor)	Cable length: 16 m (optional: 36 m)
③	Vision Cable (PC - sensor)	Cable length: 16 m (optional: 36 m)
④*	PC (optional)	Industrial PC
⑤	Communications Cable (PC - controller)	Cable length: 10 m
⑥	Power Cable (thin)	Cable length: 5 m
	Power Cable (thick)	Cable length: 10 m
⑦	Power Source Box and Cable	—

Machine Vision Head Specifications

Items		RV1100	RV500	RV300
Measurement	Measurement distance (mm)	1750 to 2350	800 to 1000	500 to 600
	Measurement range (mm)	1160 × 1160 × 600 (H)	540 × 540 × 200 (H)	340 × 340 × 100 (H)
	Target minimum workpiece size (mm) *Necessary projection area	45 × 45	20 × 20	10 × 10
Time	Measurement + recognition time (s)	2.5	1.8	1.8
	Measurement cycle (s)	5.0	3.0	3.0
Recognition	Recognition method	3D CAD matching		
	Repeatability (mm)	± 0.5	± 0.15	± 0.1
	Number of types to be registered	200 types		
Function (standard)	Empty pallet judgment function	Function to judge whether the pallet is empty or not		
	Pallet measurement function	Function to measure the position of thrown-in pallet		
	Interference check function	Function to detect interference between the hand and the workpiece or between the hand and the pallet		
	Calibration function	Function to perform the calibration of the robot and the machine vision head		
	Exposure time automatic adjustment function	Function that eliminates gloss of industry components/parts, and halation due to oil adhesion		
Function (optional)	External PC creating recognition dictionary function	Function to create the recognition dictionary with another PC in office		
	Multiple pallet recognition function	Function to recognize the multiple parts by one shot		
	Propriety judgment function to omit recognition process	Function to detect the changed area, and to do the recognition process for unchanged area by skipping the 3D measurement		
	Partial recognition function	Function to recognize the entire workpiece from partial detection		
Dimensions (mm) *Protrusions are not included		252 (W) × 206 (D) × 124 (H)		
Approx. Mass (kg)		6.4		



YASKAWA ELECTRIC CORPORATION

2-1 Kurosakishiroishi, Yahatanishi-ku, Kitakyushu, 806-0004, Japan
Phone: +81-93-645-7703 Fax: +81-93-645-7802

YASKAWA AMERICA, INC. (MOTOMAN ROBOTICS DIVISION)

100 Automation Way, Miamisburg, OH 45342, U.S.A.
Phone: +1-937-847-6200 Fax: +1-937-847-6277

YASKAWA EUROPE GmbH (ROBOTICS DIVISION)

Yaskawastrasse 1, 85391, Allershausen, Germany
Phone: +49-8166-90-100 Fax: +49-8166-90-103

YASKAWA NORDIC AB

Verkstadsatan 2, Box 504, SE-385 25 Torsås, Sweden
Phone: +46-480-417-800 Fax: +46-486-414-10

YASKAWA ELECTRIC (CHINA) CO., LTD.

22F, One Corporate Avenue, No.222 Hubin Road, Huangpu District, Shanghai 200021, China
Phone: +86-21-5385-2200 Fax: +86-21-5385-3299

YASKAWA SHOUGANG ROBOT CO., LTD.

No.7 Yongchang North Road, Beijing E&T Development Area, Beijing 100076, China
Phone: +86-10-6788-2858 Fax: +86-10-6788-2878

YASKAWA ELECTRIC KOREA CORPORATION

35F, Three IFC, 10 Gukjegeumyung-ro, Yeongdeungpo-gu, Seoul, 07326, Korea
Phone: +82-2-784-7844 Fax: +82-2-784-8495

YASKAWA ELECTRIC TAIWAN CORPORATION

12F, No.207, Sec. 3, Beishin Rd., Shindian District, New Taipei City 23143, Taiwan
Phone: +886-2-8913-1333 Fax: +886-2-8913-1513

YASKAWA ASIA PACIFIC PTE. LTD.

30A Kallang Place, #06-01, 339213, Singapore
Phone: +65-6282-3003 Fax: +65-6289-3003

YASKAWA ELECTRIC (THAILAND) CO., LTD.

59, 1st-5th Floor, Flourish Building, Soi Ratchadapisek 18, Ratchadapisek Road, Huaykwang, Bangkok 10310, Thailand
Phone: +66-2-017-0099 Fax: +66-2-017-0199

PT. YASKAWA ELECTRIC INDONESIA

Secure Building-Gedung B Lantai Dasar & Lantai 1 Jl. Raya Protokol Halim Perdanakusuma, Jakarta 13610, Indonesia
Phone: +62-21-2982-6470 Fax: +62-21-2982-6471

YASKAWA INDIA PRIVATE LIMITED (ROBOTICS DIVISION)

#426, Udyog Vihar Phase-IV, Gurgaon, Haryana 122016, India
Phone: +91-124-475-8500 Fax: +91-124-475-8542

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