**NEW PRODUCT**

**ROBOT VISION RECOGNITION PACKAGE**

**Vision3D**

**EASY INTRODUCTION OF BIN-PICKING AUTOMATION SYSTEM**

**SYSTEM CONFIGURATIONS**

- **Stereo vision system**
  - 3D image acquisition
  - Lens distortion correction calibrated camera
  - Disparity calculation (height information)

- **Robot control**

- **Ethernet Hub**

- **PC Software**
  - Recommended PC spec:
    - OS: Windows 7
    - CPU: Intel Core i5 equivalent
    - Memory: 4 GB RAM
    - Entry in multiple languages: Japanese, English and Thai

- **Package consists of stereo camera, PC software and LED lighting**

  - **POINT 1**
    - Real-time and highly accurate 3D measurement by stereo camera
      (+/- 0.7mm and 600 – 800 mm depth at 700mm distance.)
    - Random pattern projection by high luminosity LED
      Accurate positions and posture recognition by acquiring surface data of an object. Less susceptible to small fluctuations in outside light conditions. Stable 3D image detection.
    - High speed (30 fps) and high accuracy image processing
      Production throughput is improved by reduction in wait time and missed workpieces.
    - With larger depth, more workpieces can be included per one box

  - **POINT 2**
    - Software functions
      - Easy model registration
        No CAD data required. Multiple models (workpieces shapes) can be registered.
      - Easy calibration (registration of robot and camera coordinates)
        Easy set-up procedure for robot and camera coordinates orientations.
      - Box position registration and interference avoidance function
        Box position registration and interference with the box is avoided during pick movements.
      - Checking for arm working envelope
        Robot’s working envelope is monitored and if a workpiece is out of reach, it is skipped.

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3D VISION BIN-PICKING PACKAGE

Package consists of stereo camera, PC software and LED lighting
Quick and easy bin-picking of multiple workpieces with 3D camera

Real-time, fast (30fps) and highly accurate 3D measurement (image capturing, image processing, parallax calculation)

Random pattern projection by high luminosity LED, stereo camera
Surface data is obtained and 3D image is detected. Less susceptible to small fluctuations of outside light conditions. Accuracies in position and posture recognition is improved. With larger depth, more workpieces can be included per box. Waiting time and missed workpieces are minimized and production throughput is improved.

Easy model registration (no CAD data required).

Multiple models (different shapes of workpieces to be handled) can be registered. Even in a process where changes in workpieces and supply boxes are often, setting up can be done quickly at the site (on the factory floor)

Easy calibration (registration of robot and camera coordinates)
Easy set-up procedures for robot and camera coordinates and their orientation.

Box position registration and interference avoidance function
By registering the box dimensions, pick operations are carried out without interference.

Checking for arm working envelope
Robot's working envelope is monitored and if a workpiece is out of reach, it is skipped.

Easy-to-use PC software
Each icon clearly represents each function that it invokes. Easy set-up is done simply by following the icons in their order.

Toshiba Machine's Robot Vision Recognition Package TSVision3D
Easy introduction, maintenance and set-up change-over for bin-picking automation systems

This product is used in combination with vertical articulated robot TVL and TV series (with controller TSL and TS series, respectively.) Preliminary feasibility test can be carried out, with provision of sample workpieces.

* Contents included in this catalog are subject to change without prior notice to reflect improvements.