KEYENCE

Vision-Guided Robotics

CLICK
PICK
PLACE

CV-X200/X100 Series
THE GLOBAL STANDARD
FOR VISION-GUIDED ROBOTICS

■ SIMPLE INTERFACE ———— Equipped with step-by-step interface for vision-guided robotics
■ DIRECT CONNECTIONS ———— Easily establish connections by selecting the robot manufacturer
■ AUTO-CALIBRATION ———— Calibration completed with a single click
■ POWERFUL SEARCH TOOL ———— Highly stable operation
KEYENCE ROBOT VISION APPLICATIONS

Packaging machined parts

The coordinates are output in order, starting with the upper-left part.

Position detection for screw tightening

Misalignment is detected and the corrected position is output to the robot.

Grip correction during circuit board loading

Accurate position and orientation values are output.

Positioning during quality inspection

The position coordinates of multiple parts are output simultaneously.
EXTREMELY SIMPLE INTERFACE FOR VISION-GUIDED ROBOTICS

A variety of operations are supported in addition to the standard picking, placing, and grip misalignment correction.

Easy Setup Menu

There’s no need to perform the bothersome manual calibration or calculations that are characteristic of conventional robot vision setup. Quickly configure the optimum settings by simply selecting the application matching the desired robot operation.
DIRECT CONNECTIONS

OUTSTANDING COMPATIBILITY WITH A WIDE VARIETY OF ROBOT MANUFACTURERS

Robot vision setup program provided

Robot programs for use in configuring an image sensor for vision-guided robotics are available from KEYENCE. This enables seamless operations between image sensors and robots.

Robot connection settings

Connect to standard robot controllers by selecting from a list of common manufacturers, or select custom for connecting with specialized robot controllers.

ROBOT JOGGING CAN BE CONTROLLED FROM THE VISION SYSTEM

This is useful when making fine adjustments to the image capture position and specifying the start point for calibration.
EASILY CALIBRATE THE ROBOT AND VISION SYSTEM WITH THE CLICK OF A BUTTON

Common issues with conventional methods (manual methods)
- Manual calibration takes a long time
- Accuracy varies between operators
- Difficult to readjust for installation misalignment
- Difficult to reproduce the image in different installation locations due to variations in ambient conditions

Solutions provided with KEYENCE vision-guided robotics
- Easy operation with a single click
- High accuracy regardless of operator
- Quick calibration to fix issues caused by misalignment
- Fast and accurate duplication regardless of the location

Auto-calibration
Settings are easy to configure: just select the movement pattern and press the "Execute" button to execute calibration. Calibration is automatically performed while the robot is moving. This reduces calibration time by eliminating the need to manually control the robot while maintaining a high level of accuracy.

The robot moves according to the set pattern.
Use of CV-X robot operations simplifies debugging.
POWERSFUL SEARCH TOOL

HIGHLY EVOLVED SEARCH ALGORITHM PROVIDES EXCELLENT PERFORMANCE AND STABLE OPERATION

PatternTrax

Search tool with ultimate performance, speed, and accuracy even under inferior image conditions

A highly stable search can be performed even if changes occur in the target such as chips/flaws and contrast reductions. This tool also offers very accurate search performance as a position adjustment reference for other inspection tools.

HIGH ROBUSTNESS

Allows accurate searching even if the capture conditions change from the original registered image.

Reliable detection even with target overlap or partial targets

Even if the search target has some overlap with its neighbors or protrudes outside the inspection region, stable detection can still be performed.

Search can be performed on up to 2000 targets

Up to 2000 patterns of the same target can be detected with one tool. Searching in a large field of view all at once is possible when using with the 21 mega-pixel camera.

Multiple methods of specifying the target detection order

Detection order options have been increased over previous search tools offering higher flexibility in outputting result data.
COMBINING ROBOT GUIDANCE WITH KEYENCE’S SUPERIOR INSPECTION PERFORMANCE

VARIOUS SORTING INSPECTIONS

Simultaneously sorting by part type, front/back, and orientation.

IDENTIFICATION INSPECTION
(OCR, 1D/2D CODES)

Position identification and character reading are performed at the same time.

QUALITY INSPECTION

After picking, products are inspected and can be rejected when defects are found.

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