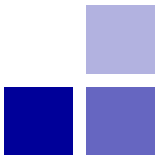


Machine Vision System application notes (Liquid crystal applications)

Panasonic Industrial Devices SUNX Co., Ltd.



Alignment

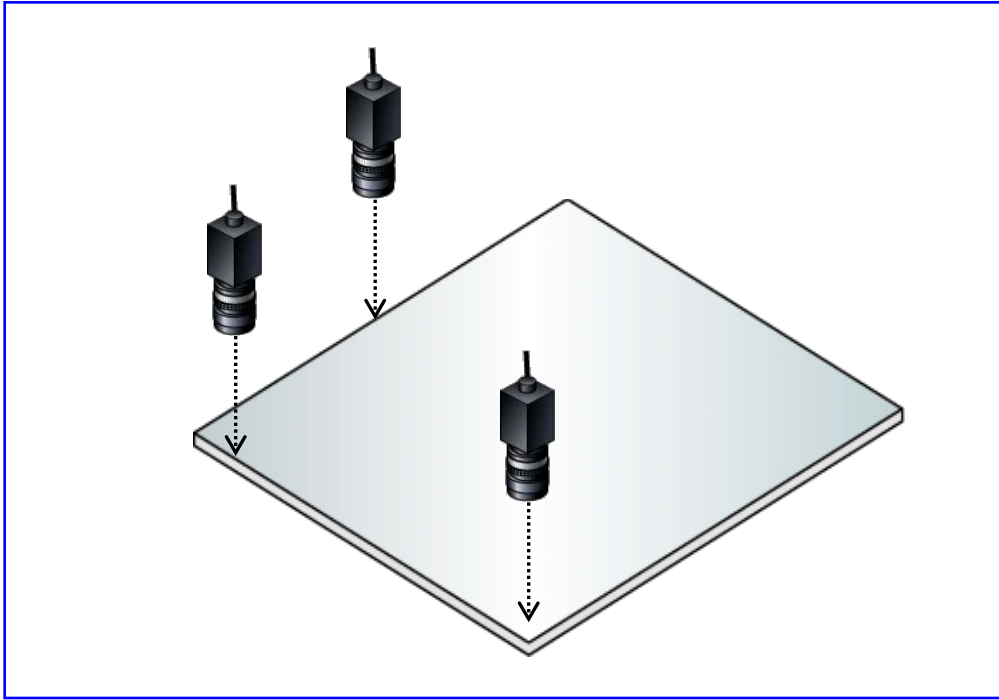
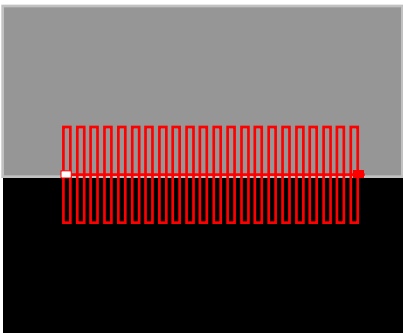


Image illustration



Description

- Align the end standard of glass substrates to inscribe alignment marks on the substrate

Merits in purchasing our product

- Convert camera coordinates to global coordinates using the calibration function
- Detect corners using the combination of smart edge (line) and geometry calculation without creating expressions
- High-precision inspection using a 4 megapixel camera

Examples of used functions

- Calibration
- Smart edge (line)
- Geometry calculation

Recommended model

PV200	4 megapixel camera
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Alignment (positioning)

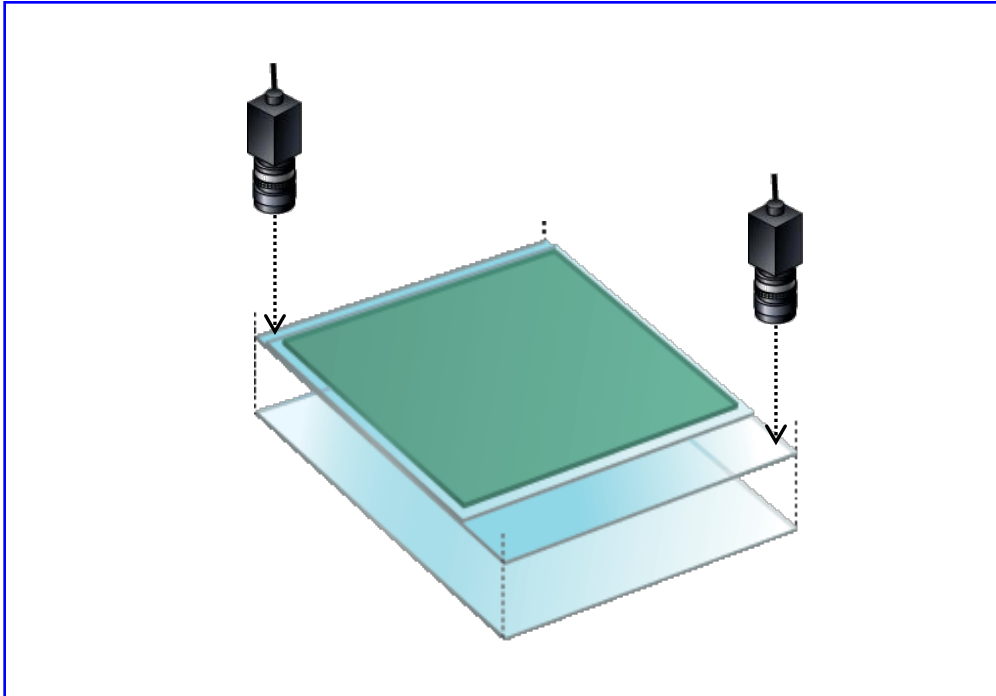
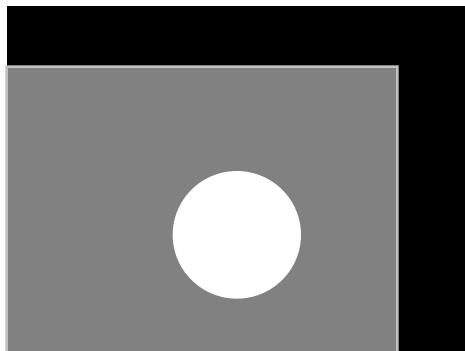


Image illustration



■ Description

- Detect alignment marks and perform positioning

■ Merits in purchasing our product

- Supports various kinds of alignment marks
- Auto calibration automatically converts camera coordinates to global coordinates
- Output stage movement positions in absolute coordinates

■ Examples of used functions

- Auto calibration
- Matching

■ Recommended model

PV240	
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Alignment (bonding)

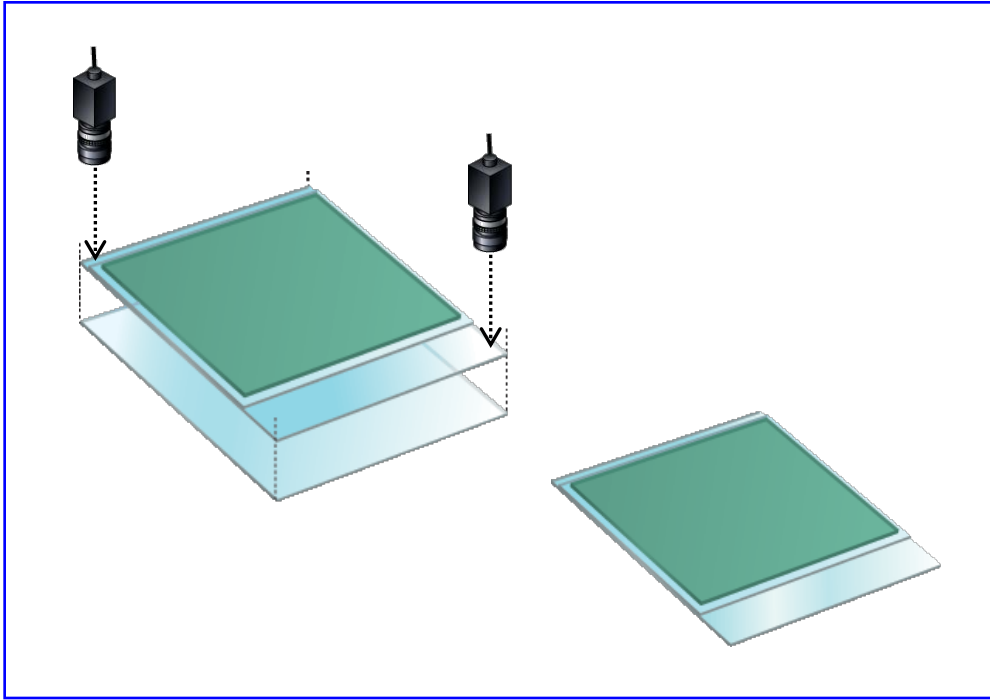


Image illustration



■ Description

- Position two sheets of substrates to be bonded together

■ Merits in purchasing our product

- Supports various kinds of alignment marks
- Auto calibration automatically converts camera coordinates to global coordinates
- Output stage movement positions in absolute coordinates

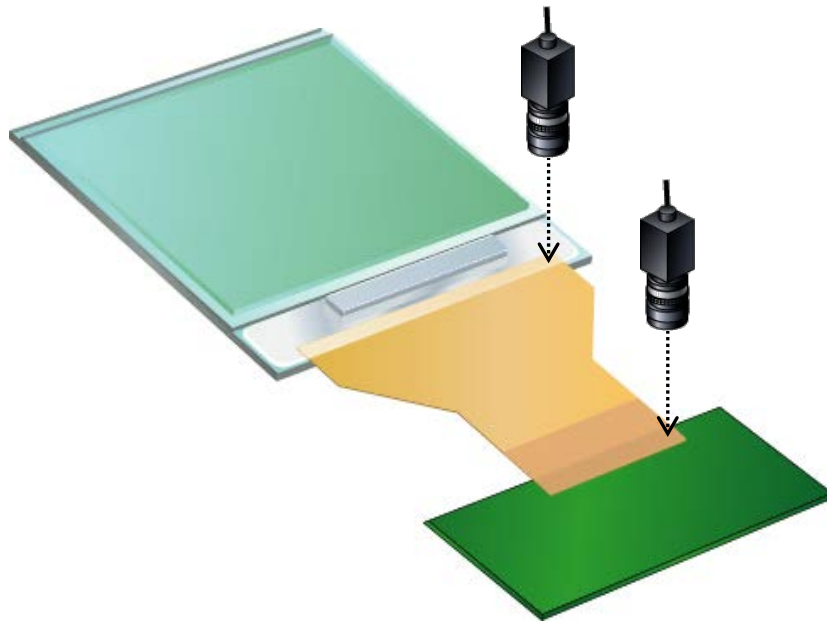
■ Examples of used functions

- Auto calibration
- Matching

■ Recommended model

PV240	
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Alignment (FPC and TAB bonding)



■ Description

- Position FPCs, TABs, and the like to be bonded to the glass substrate

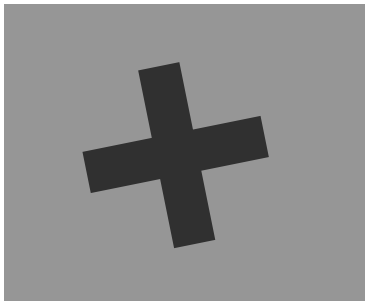
■ Merits in purchasing our product

- Supports various kinds of alignment marks
- Auto calibration automatically converts camera coordinates to global coordinates
- Output stage movement positions in absolute coordinates

■ Examples of used functions

- Auto calibration
- Matching

Image illustration



■ Recommended model

PV240

ACF tape misalignment inspection

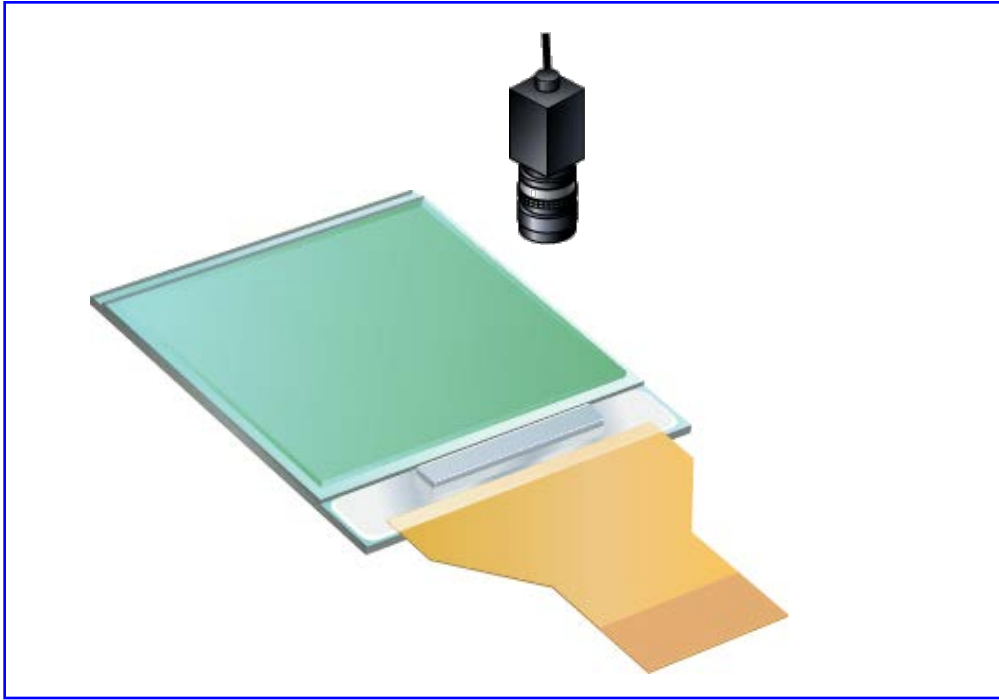
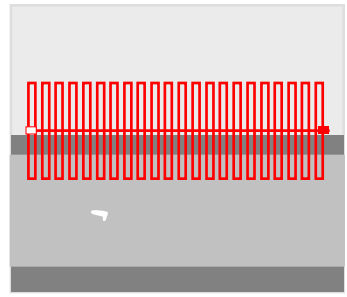
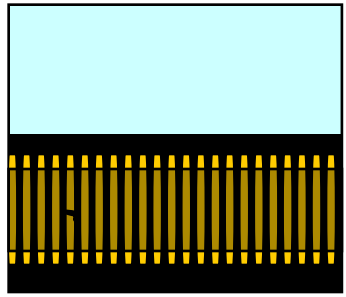


Image illustration



Description

- Measure the amount of misalignment of ACF tapes affixed on the FPC.

Merits in purchasing our product

- Enhance the film edges using 21 types of abundant preprocessing filters for stable inspection
- High-precision inspection using a 4 megapixel camera
- Simultaneously inspect for foreign substances

Examples of used functions

- Smart edge (line)
- Image preprocessing, image conversion

Recommended model

PV200	4 megapixel camera compatible
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ACF tape misalignment inspection

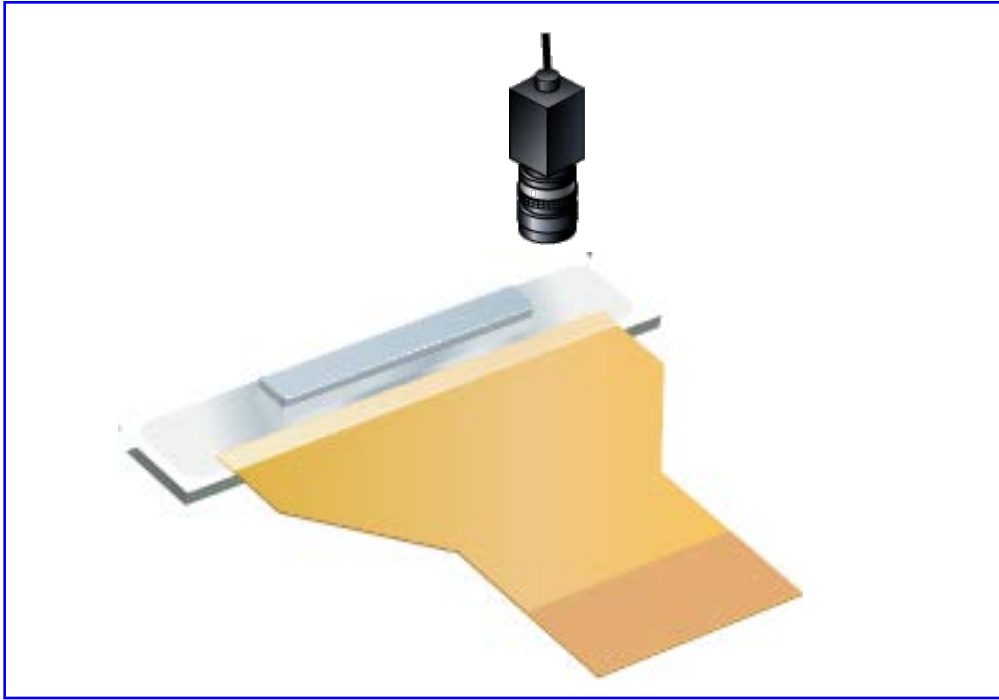
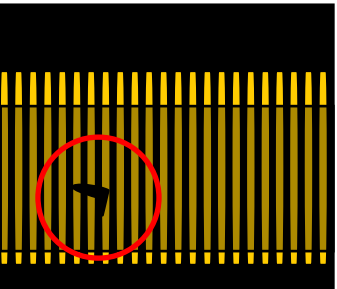


Image illustration



Description

- Detect foreign substances on FPC terminals

Merits in purchasing our product

- Ignore terminals and enhance defects using 21 types of abundant preprocessing filters
- High-precision inspection using a 4 megapixel camera

Examples of used functions

- Image preprocessing, image conversion
- Feature extraction

Recommended model

PV200	
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Detection of the corner positions of liquid crystal (FPD) glasses and polarizing plates

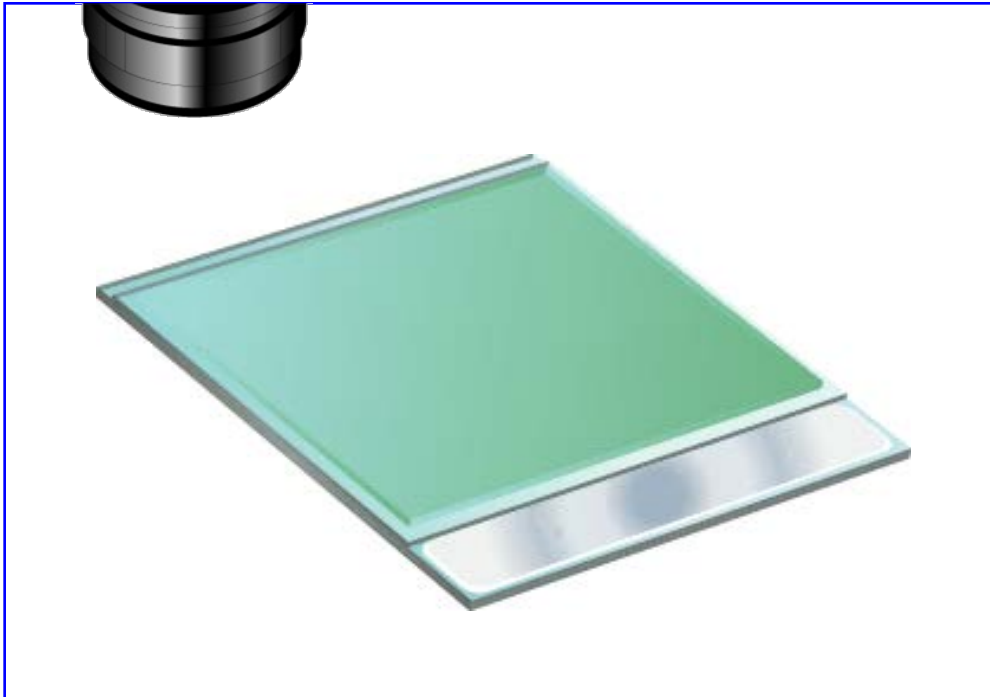
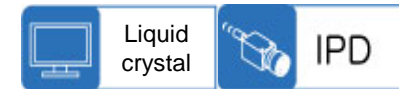
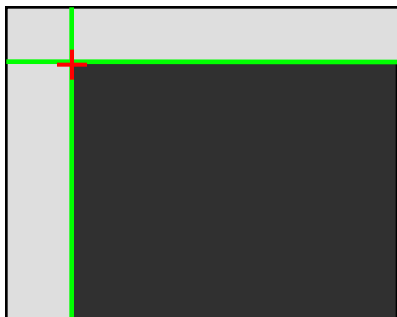


Image illustration



Description

- Output the position coordinates of the corners of liquid crystal or PDP glasses and polarizing plates to PLCs and perform positioning

*In some situations, the amount of corner misalignment is displayed on the screen of a semiautomatic machine, and the operator makes adjustments using a micrometer or the like.

Merits in purchasing our product

- Detect corners using the combination of smart edge (line) and geometry calculation without creating expressions

Examples of used functions

- Smart edge (line)
- Geometry calculation

Recommended model

PV200	
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Detection of foreign substances in plastic sheets

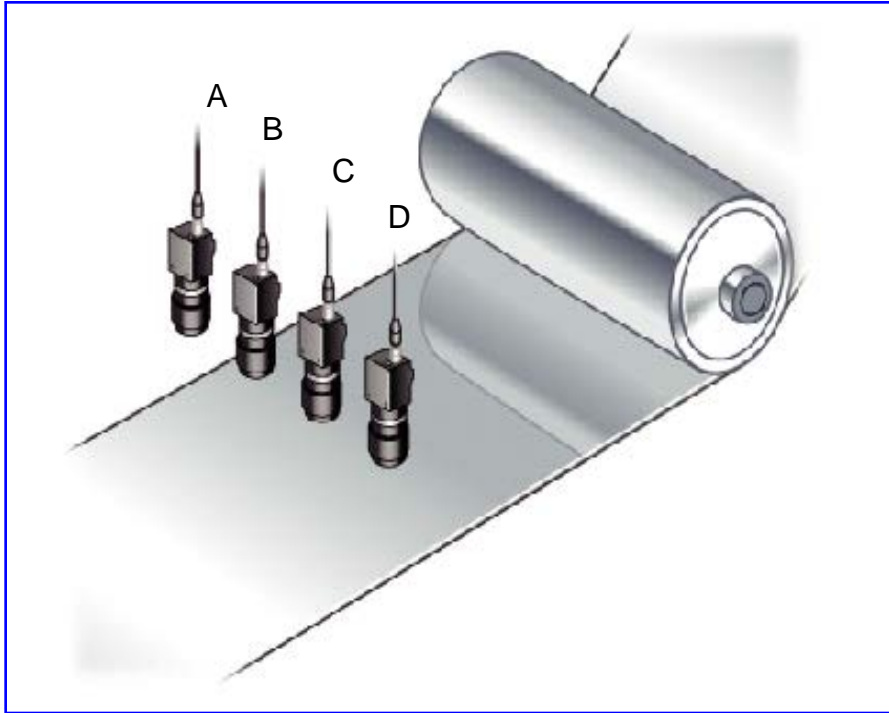
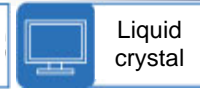
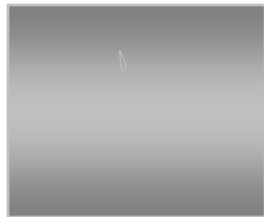


Image illustration



Camera image



NG
Damage present

Description

- Inspect foreign substances adhered to transparent plastic sheets using the plastic sheet cutting machine. Divide the detection area by lining up several cameras and detect small foreign substances.

Merits in using our product

- High-speed foreign substance detection using the Penta-Processor
- Stable appearance inspection using 21 types of abundant preprocessing filters

Examples of used functions

- Damage detection
- Image preprocessing, image conversion

Applicable models

Applicable model		
PV200		Connect up to two 4 megapixel cameras
PV500V2		Connect up to four 3 megapixel cameras