

Production sensing system Dsupport-Eye



Equipping the die casting machine with “**eyes**”
Detecting production issues in place of the operator
Closely monitoring the process to support production control

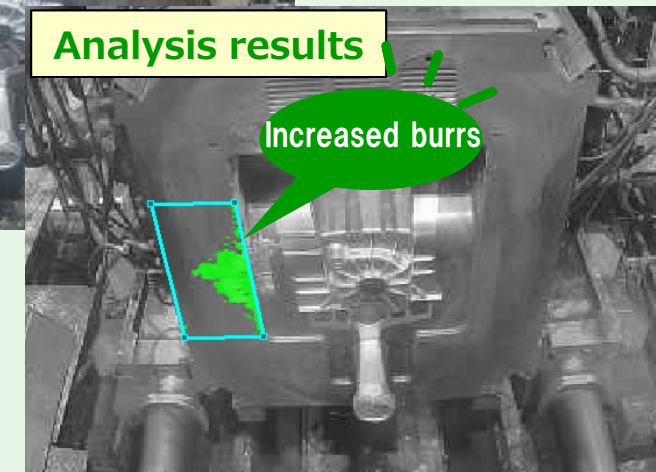
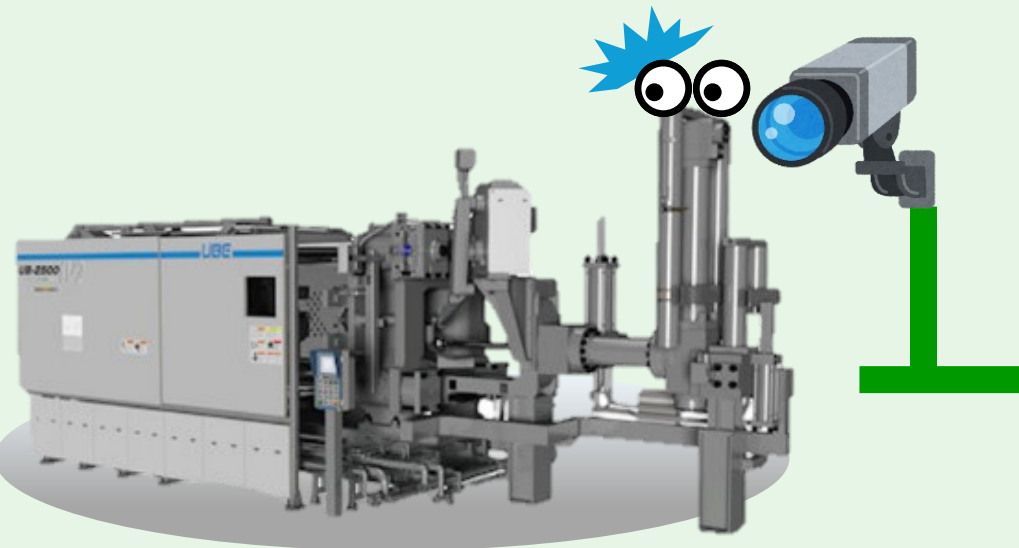


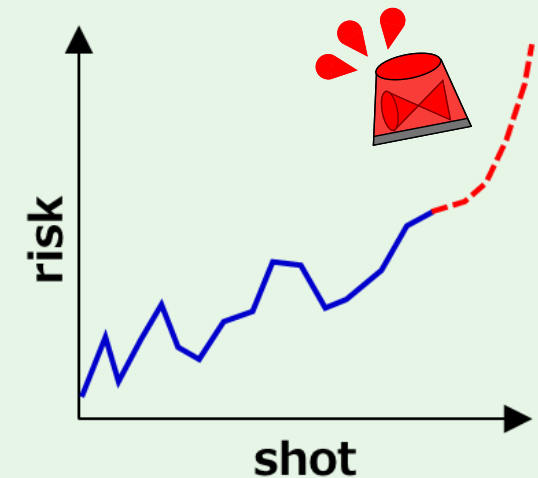
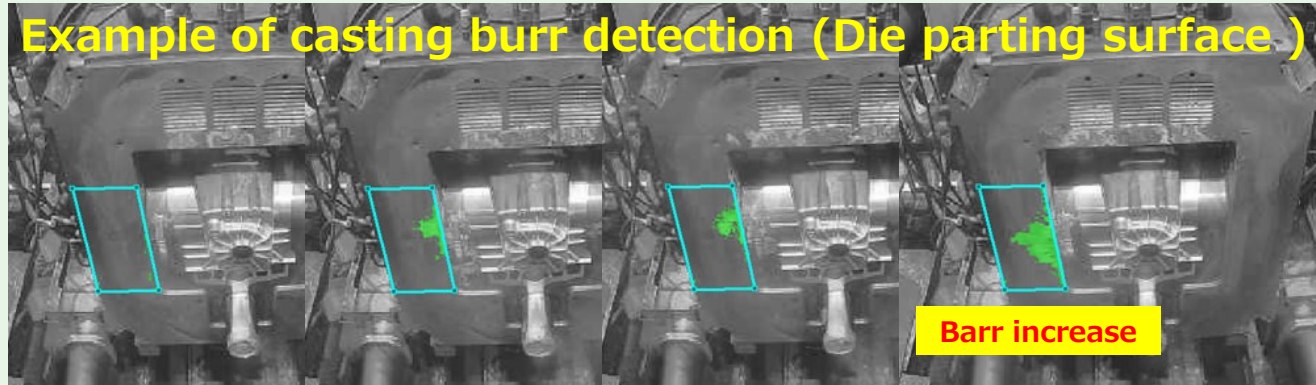
Image analysis

Analyze specified regions within an image.

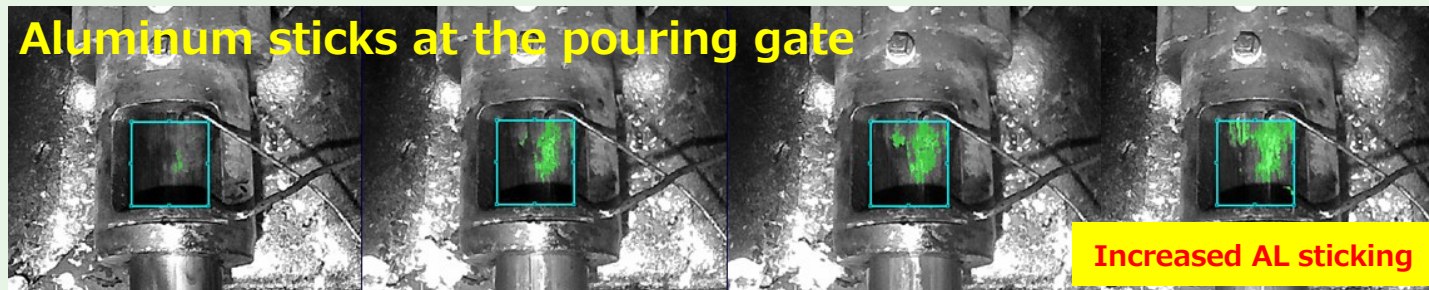
Quantitatively evaluate the presence/absence and increase/decrease of burrs and aluminum sticking.

Based on the analysis results, **it is possible to alarm or stop the die-casting machine cycle.**

Example of casting burr detection (Die parting surface)



Aluminum sticks at the pouring gate



Production sensing system Dsupport-Eye



Data collection

Up to four cameras can be installed.

Images of each section are captured in synchronization with machine operation.

Contributes to enhanced **visualization and improvement of traceability management.**

Die opening position



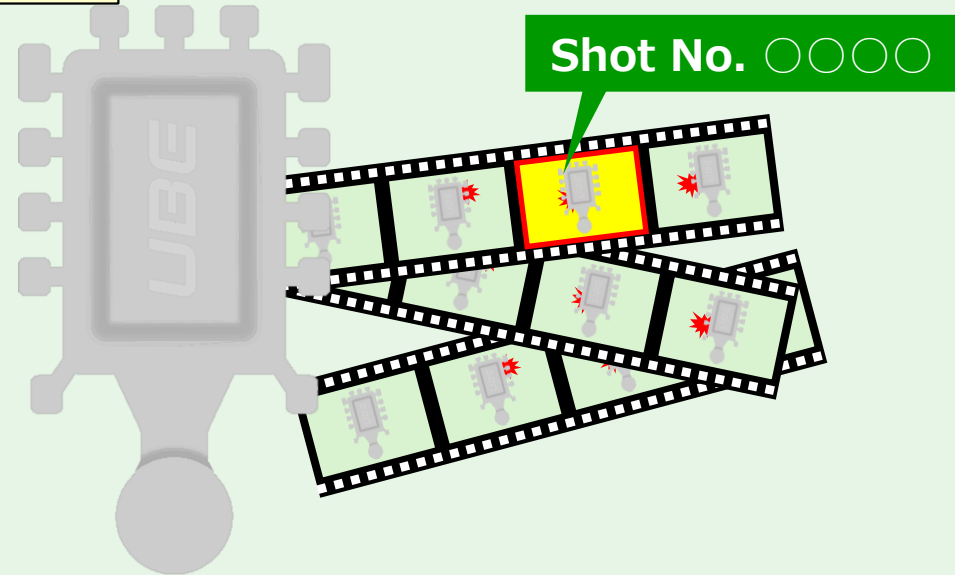
Molten metal surface detection



Robot home position



Injection home position

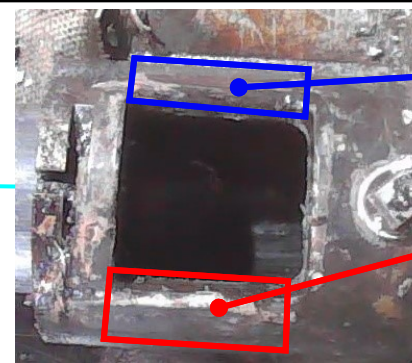
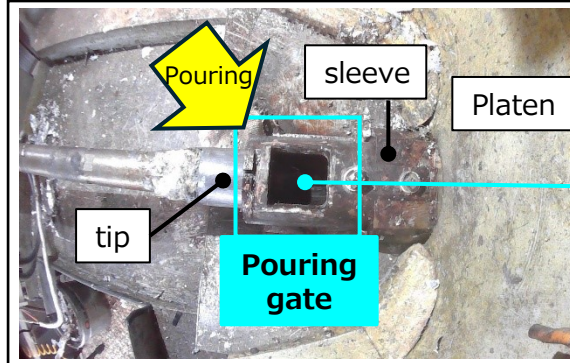
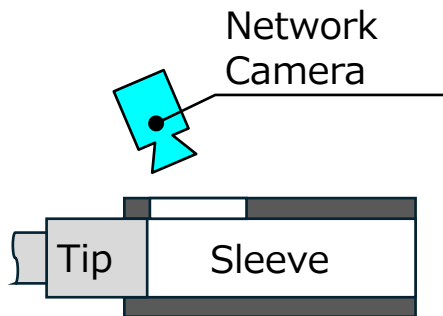


■ Do you have any of these problems?

- ☑ Aluminum is depositing on the sleeve without being noticed.
- ☑ Aluminum fragments may mix into the molten metal and degrade casting quality.

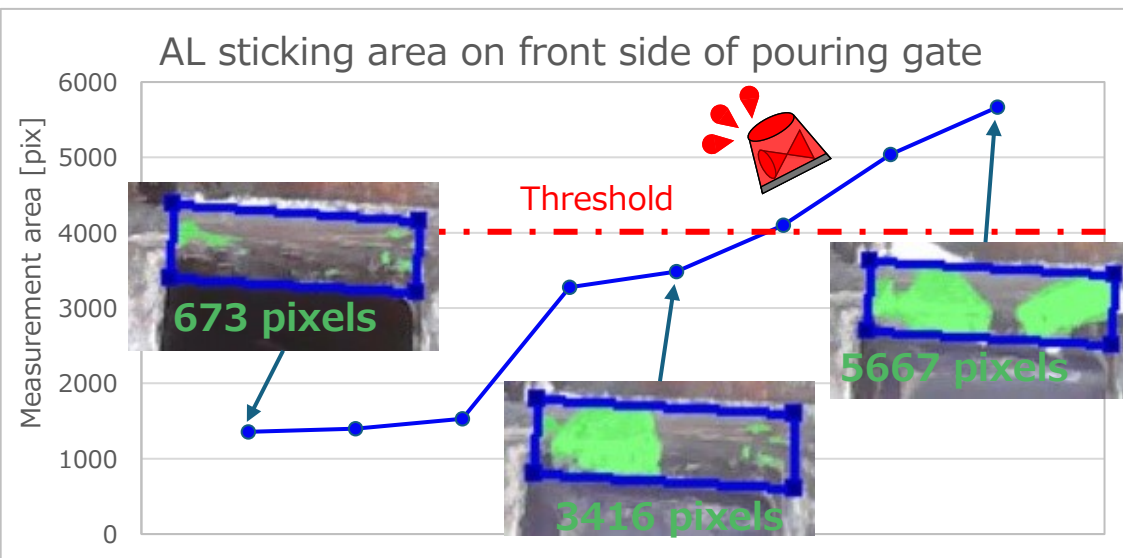
■ Use of Dsupport-Eye

1. Shooting setting



- ① **Front side of gate**
Dripping from the ladle
Backflow from the sleeve
- ② **Rear side of gate**
Spillage during pouring
Backflow from the sleeve

2. Measurement result



[Effects of Application]

Identifying aluminum fragments sticking around the pouring gate.

- **Early detection of molten metal spillage !**
- **Detect aluminum contamination before it occurs!**

Case: Molten Metal Spill ②

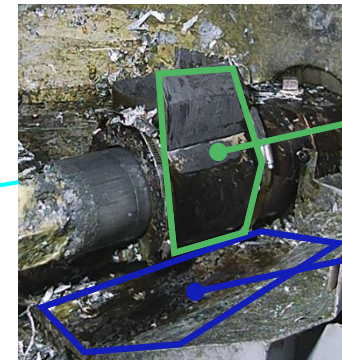
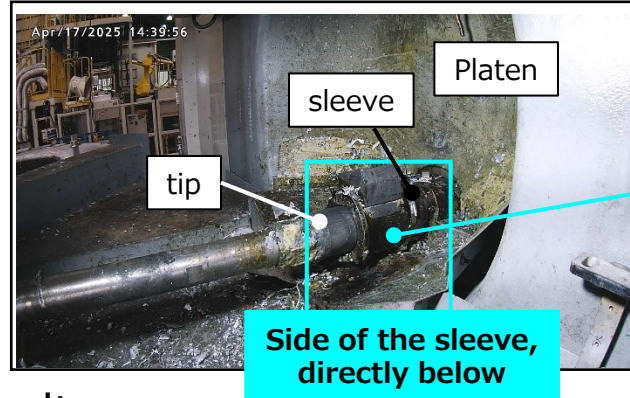
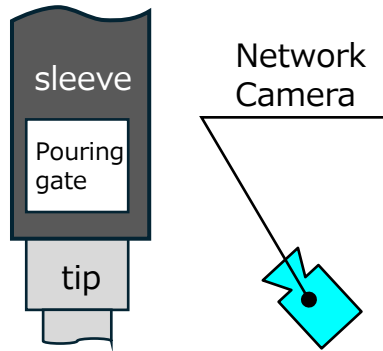


■ Do you have any of these problems?

- ☑ It is unclear when the molten metal spillage started.
- ☑ Concerning about a possibility of fire in a hidden area.

■ Use of Dsupport-Eye

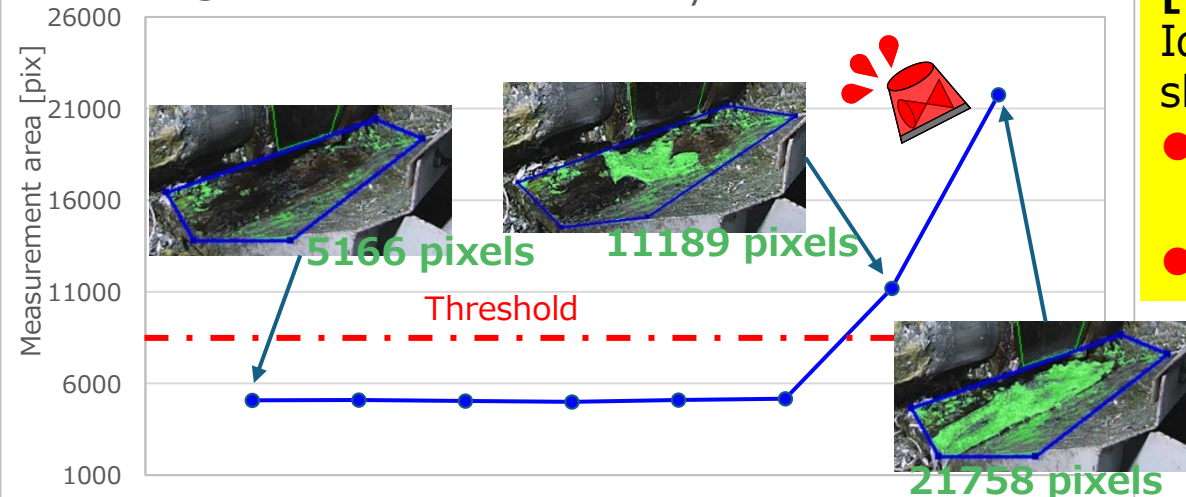
1. Shooting setting



- ① Side of the sleeve
Dripping from the sleeve
- ② Directly below the sleeve
Spilling out from the sleeve

2. Measurement result

② Area of aluminum directly below the sleeve



[Effects of Application]

Identifying aluminum sticking around the sleeve

- Early detection of spilled molten metal !
- Detect before a fire occurs !

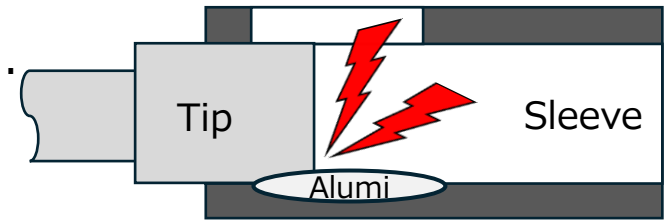
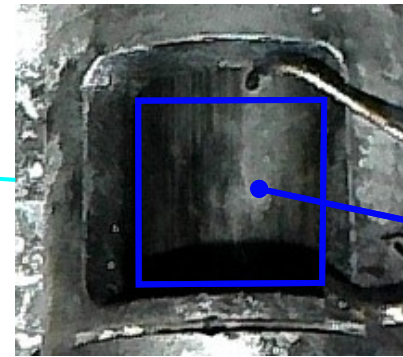
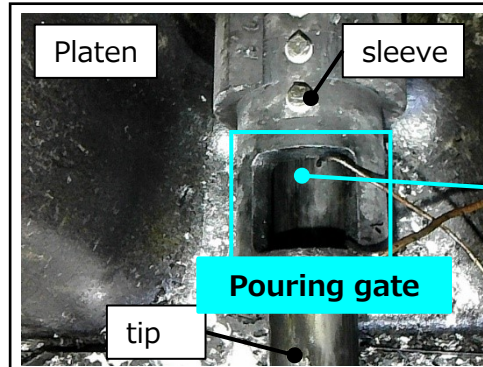
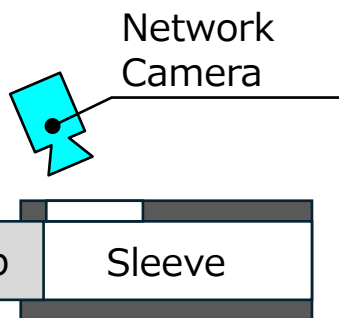
Case: AL sticking in the sleeve

■ Do you have any of these problems?

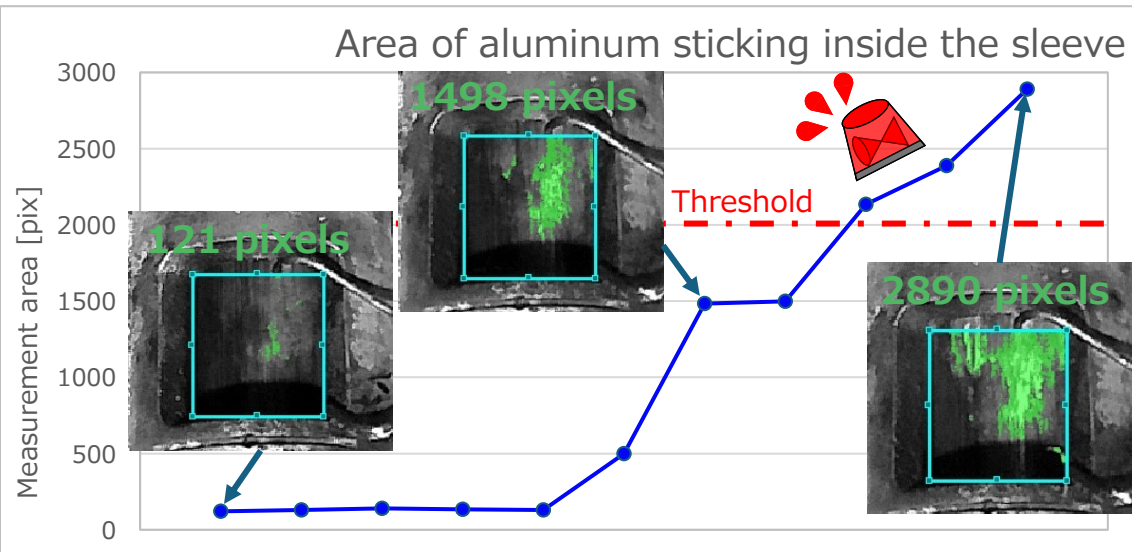
- ☑ Aluminum sticks inside the sleeve is causing chip galling.

■ Use of Dsupport-Eye

1. Shooting setting



2. Measurement result



[Effects of Application]

Identifying aluminum sticking to inside of the sleeve

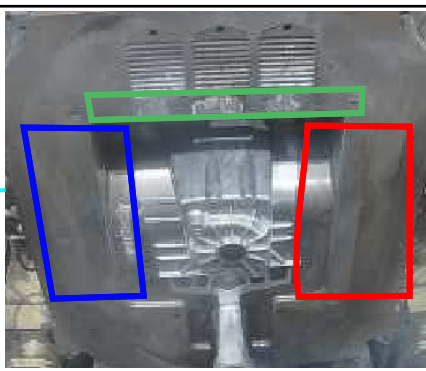
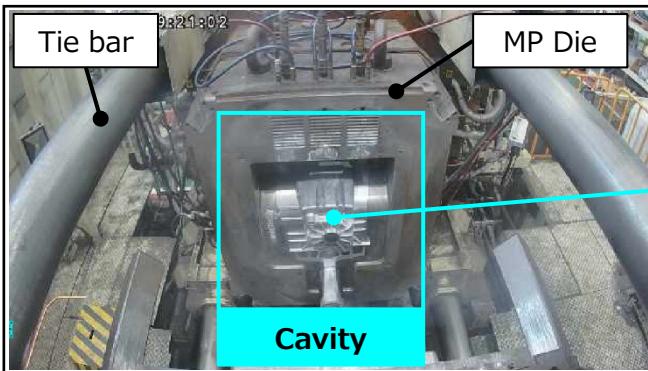
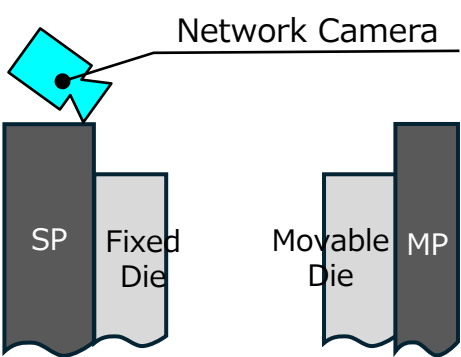
- Early detection of signs of tip galling !

■ Do you have any of these problems?

- ☑ Burrs can form without you noticing.
- ☑ I'm worried that the burrs will continue and damage the mold.

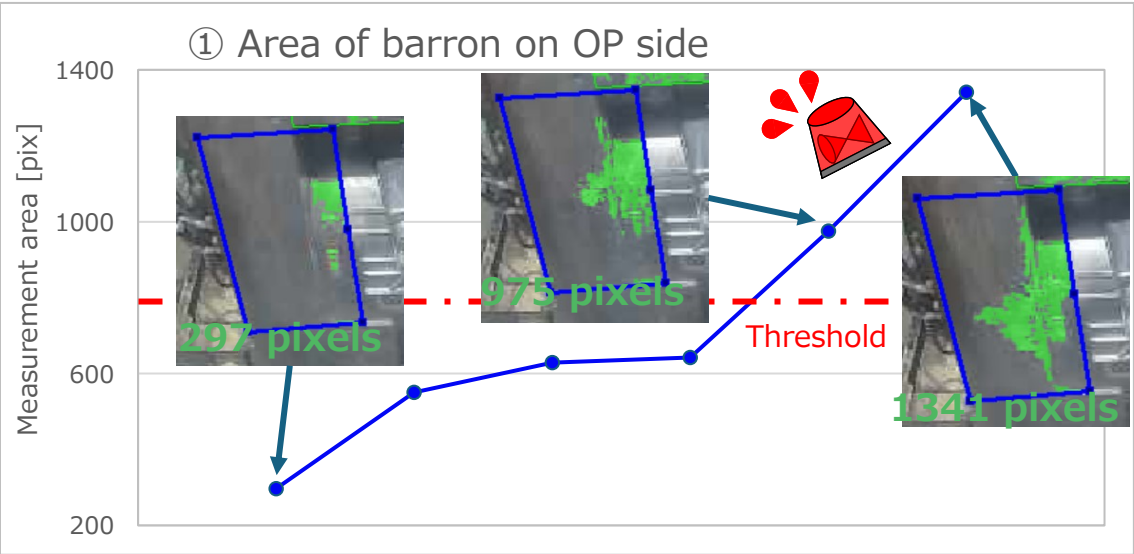
■ Use of Dsupport-Eye

1. Shooting setting



- ① Operator side
- ② Top side
- ② Helper side

2. Measurement result



[Effects of Application]
Identifying burrs around the cavity.

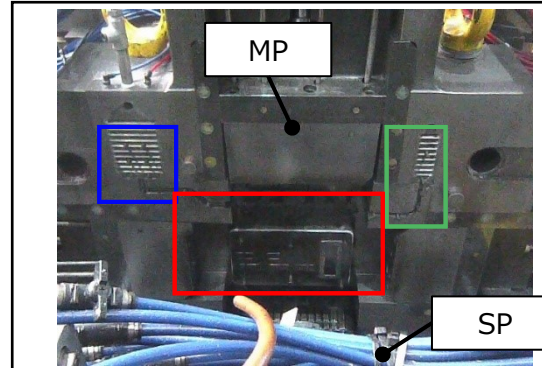
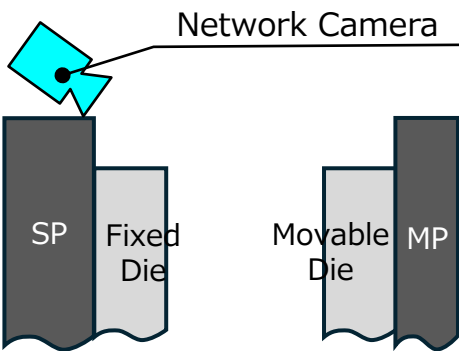
- Early detection of burrs!
- Flash detected!

■ Do you have any of these problems?

- ☑ concerning that remained aluminum might get trapped and damage the die.
- ☑ Concerning that remained aluminum may be contained and degrade the casting quality.

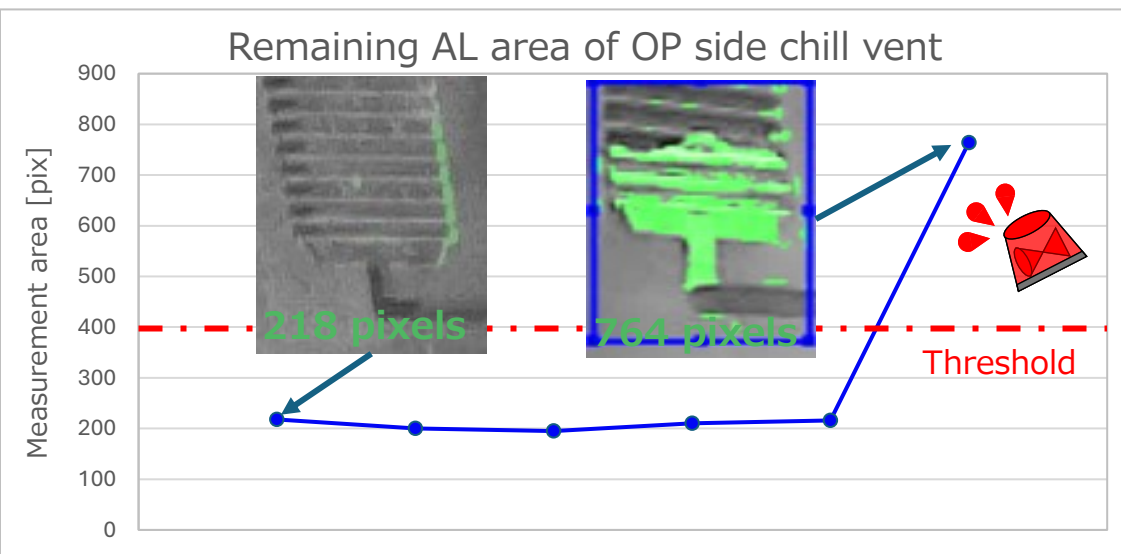
■ Use of Dsupport-Eye

1. Shooting setting



- ① Cavity
- ② Operator side chill vent
- ③ Helper side chill vent

2. Measurement result



[Effects of Application]

Identifying aluminum fragments sticking to the die surface.

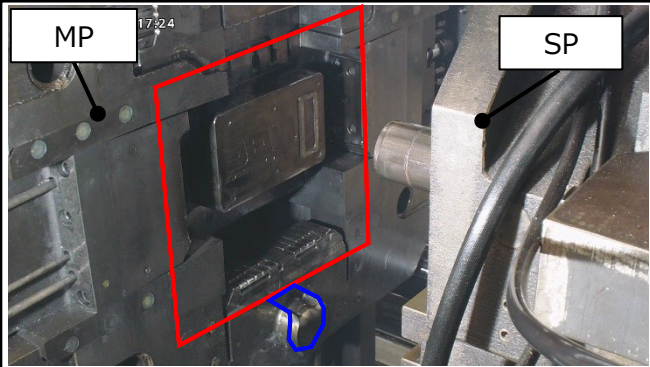
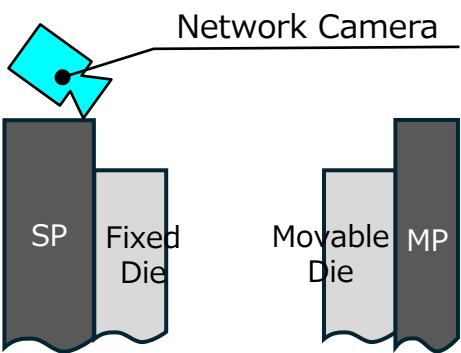
- Finding remaining aluminum !

■ Do you have any of these problems?

- ☑ Soldering defects may be overlooked.
- ☑ Judgment of die soldering varies depending on the operator.

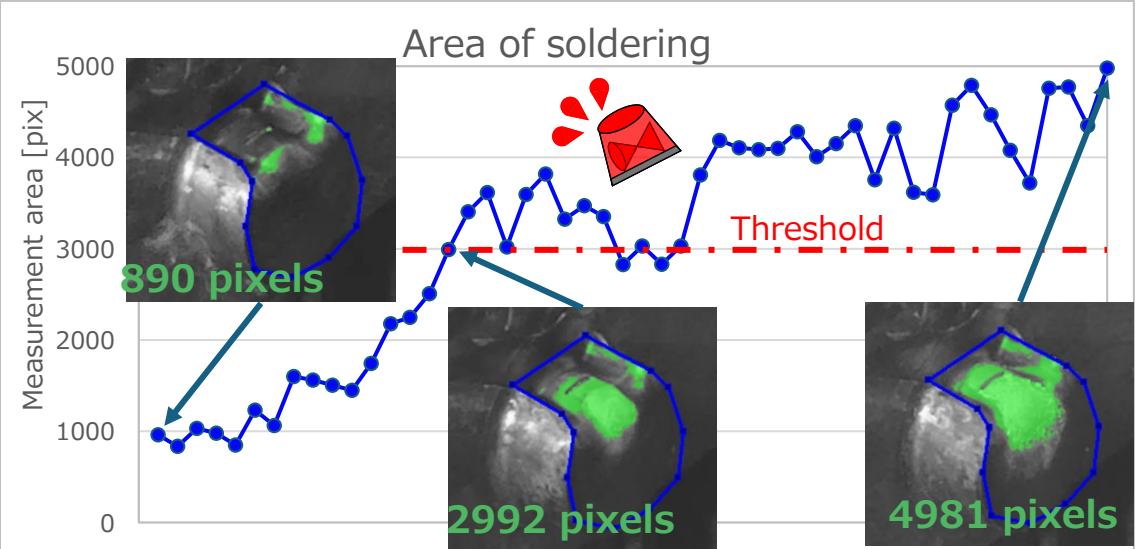
■ Use of Dsupport-Eye

1. Shooting setting



- ① Cavity
- ② Distributor

2. Measurement result



[Effects of Application]

Identifying the soldering area on the die surface.

- Early detection of die soldering !
- Quantitative evaluation of die soldering !