


Work Inspection Camera

RICOH SC-20

Collection of tips by application

[Lighting]

- ※ This document introduces tips for constructing a lighting environment using SC-20, depending on the type of inspection object.
- ※ Since the actual conditions at the job site will vary depending on the shape, texture, color, and ambient light of the parts, the contents of this document are for reference only and should be adjusted optimally at the actual job site.
- ※ For basic information on lighting, please refer to Reference  [\["Lighting" for improved inspection accuracy\]](#).

Tips 1 . Paper (assuming product bundles, etc.)



Work Lighting



Ring Lighting



Bar Lighting

■■■ This is the trick ! ■■■

Trick① If the object is paper, etc., it is less reflective and may be fine in a general environment (work lighting only).

Trick② If the environment is dark and lighting is required, the use of lighting with a dimmer function is ideal.

- ※ Bar lighting needs to be considered for fixing method. Ring lighting can be fixed with a fixture.

Tips 2 . Screws



Work Lighting



Ring Lighting



Bar Lighting

■■■ This is the trick ! ■■■

Trick① If the object is a screw, score variation will occur unless the master image (correct image) was taken in the same environment.

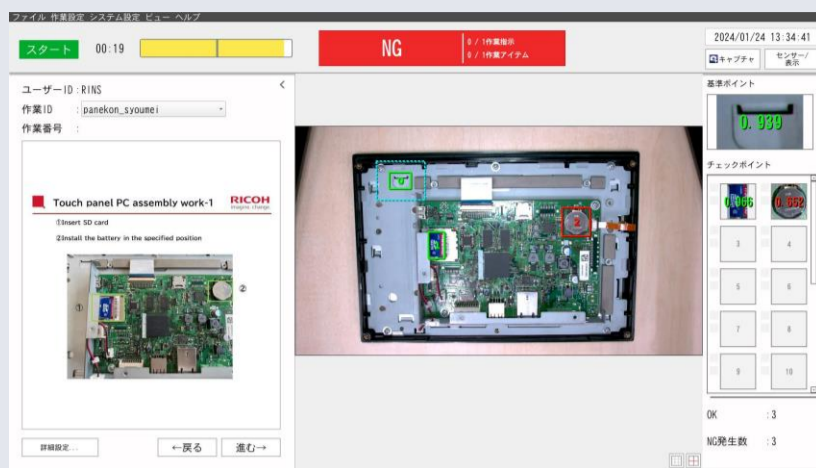
Example: If the master image was taken with ring lighting, the score will decrease if work lighting or bar lighting is applied.

Trick② Reflection of light changes depending on the way the light hits the surface, and the matching (shape) is affected.

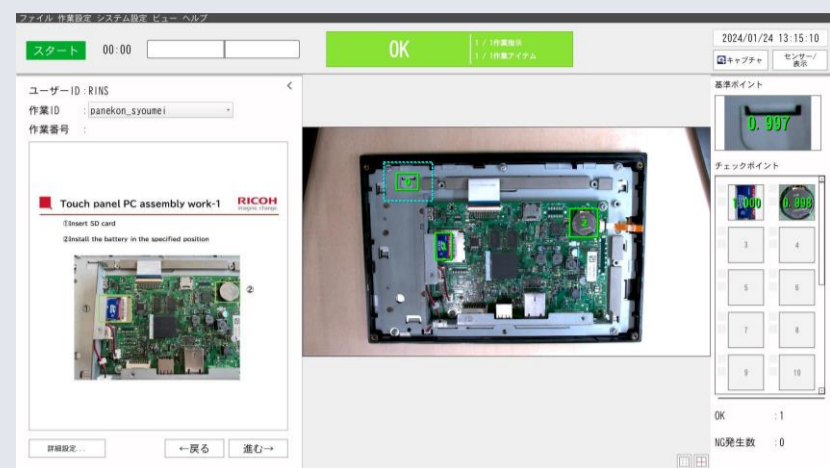
⇒It is necessary to construct an environment where light exposure is constant (not affected by ambient light, etc.).

If only general ambient lighting is used, shadows are likely to affect the judgment, so it is better to prepare special lighting to stabilize the judgment comparatively.

Tips 3. Assembly of electronic equipment



Ring Lighting



Bar Lighting

■ ■ ■ This is the trick ! ■ ■ ■

Trick①

In the case of substrates, etc., a constant environment tends to stabilize the judgment.

⇒Bar lighting is effective because it provides diffuse reflected light (indirect light), which reduces partial blown out highlights and creates a constant environment.

*** Please keep the lighting and the object away from each other.**

⇒Lighting from one direction may be used to facilitate outlines by using shadows. (DIP switches, tall parts, etc.)

*** Please keep the object close to the lighting.**

Trick②

Ring lighting is a direct reflection and causes partial blown out highlights, so if the target part is under the lighting, the judgment will be affected.

Tips 4. Non-woven fabrics

■ For ring lighting



Before pasting



After pasting

■ For bar lighting



Before pasting



After pasting

■ ■ ■ This is the trick ! ■ ■ ■

Trick①

Ring lighting is a normal reflected light, which reflects white and makes it easy to clearly see the presence or absence of an object.

⇒ **Detection by color or shape (matching) is effective** because the difference between presence and absence is easy to see. *** Texture judging causes variation in scores**

Trick②

Bar lighting is diffuse reflected light (indirect light), which lights the entire area and makes it difficult to clearly see whether an object is present or not.

⇒As a constant light shines on the entire surface, **detection is effective for texture judgment**. *** Color judgment has a large variation in scores.**