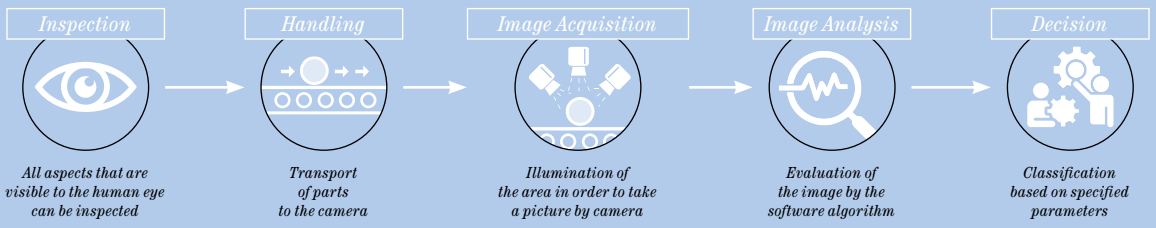
Where the human eye reaches its limit

… captured in a blink

SPALECK inspection system SIT

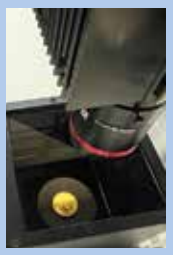
By automating the inspection, the human factor is eliminated as a potential source of error and the quality of the inspection is therefore significantly increased.

Principle



Graphics: © spaleck

Inspections are carried out on the basis of a previously defined quality standard. The parts with deviations detected will be separated automatically. The 3D surface inspection allows a precise dimensional measurement of the geometry and relife.



2D camera technology

2D image capture is based on the principle of the human eye – light falls on an object, is reflected and captured by the eye. In our systems, artificial lighting is used to generate light beams that are reflected by the object and captured by the camera. The choice of suitable lighting and camera depends on the application.

The following features can be checked:

- Colors and color deviations
- Damages and scratches
- Surface gloss and structure
- Labeling errors
- Stains
- Batch blending
- Burr on the profile of the objects

2D camera technology for edge inspection

For geometric reasons, 2D and 3D camera technology only captures the top and bottom of an object, but not the edges. A special 2D camera in combination with a ring light and a catadioptric lens is used to inspect the edge surfaces.

The following features can be checked:

- Damages and scratches
- Labeling errors
- Batch blending

3D camera technology

3D image capture picks up where 2D camera technology reaches its limits, particularly with regard to the depth of field of the images and the ability to recognize differences in height. To create a height profile, the component is illuminated with a line laser. The laser beam is reflected and captured by a camera. The illumination of the line laser generates many sectional images. This partial information of the component is put together by the software to form an overall object.

The following features can be checked:

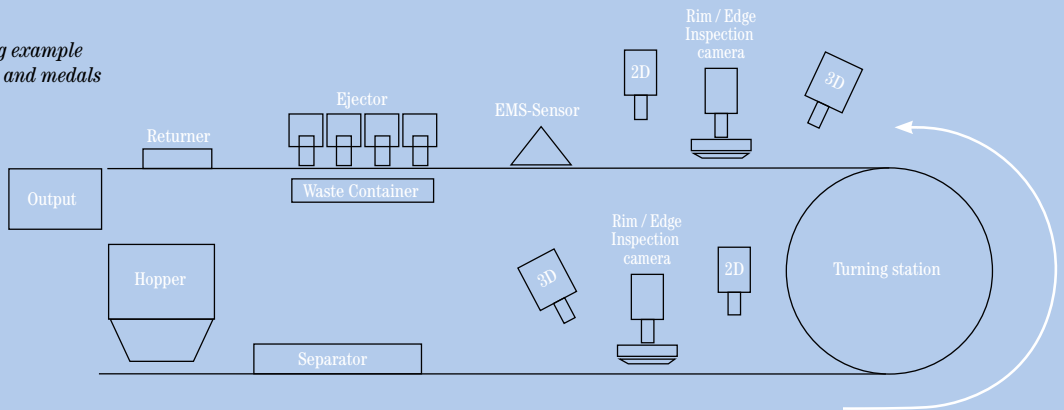
- Geometry and shape
- Damages and scratches
- Jamming of foreign parts within e.g. drill holes
- Deflection of the objects
- Batch blending
- Characteristics and structures
- Labeling errors

EMS sensors

This measuring principle for checking the electromagnetic signature is used worldwide in vending machines in which coins are used for payment.

Inductive testing of the coin or coin blank provides information about the material composition and/or coating of the coin/blank. The measured values are compared with a material database and assessed as good or bad depending on the deviation from the references or the deviation defined as acceptable.

Handling example for coins and medals



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