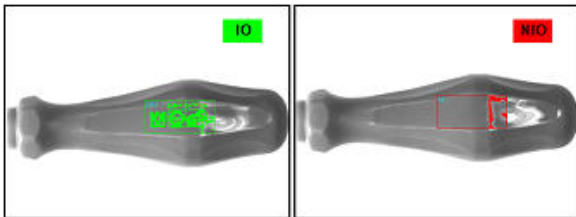


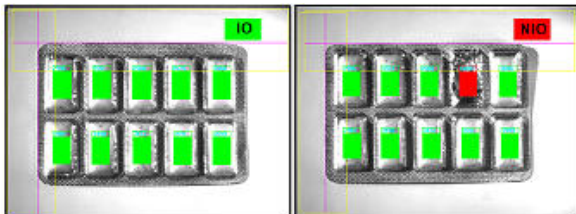
CheckPro XT Software Module

The Check Pro software module can be used in many areas for the most diverse applications:

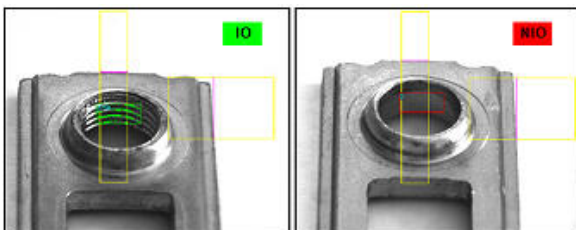
- On imprints and labels
- An inspection as to whether the intensity of the label's colors is below a certain threshold
- To check for the presence of holes or threads
- To check for the presence of any parts that have been added or affixed
- Layout checks of circuit boards
- Detection of surface defects
- Control of completeness of blister packaging
- To check for the presence of coverings and other components
- Differences in type, and much more...



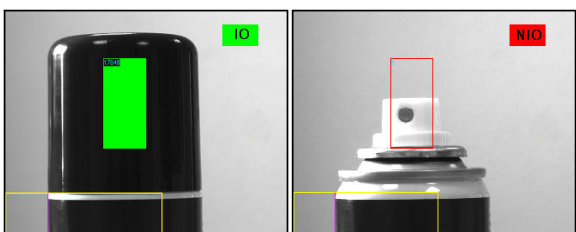
Check for the presence of imprints and labels



Completeness check of blisters



Check for the presence of threads

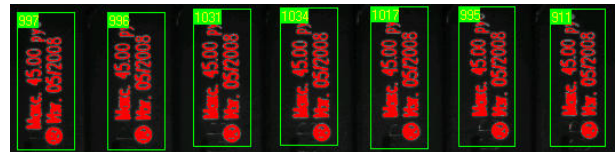


Presence check

Up to several search areas can be defined (AOI's = area of interest), whose position can be statically or dynamically defined. For each AOI, various check characteristics can be defined.

As a part of that, it can be determined if a characteristic is defined using:

- An exemplar comparison (exemplar),
- A pixel number (from to) in a grey scale value area (grey values) or
- A divergence from a mean value, meaning a pixel number (from to), which can be defined with a gray scale value difference (which can be set) lighter or darker than the mean value or the gray value (mean value).



Presence of identifiers (pixel number)



Check for presence of characters (exemplar comparison)

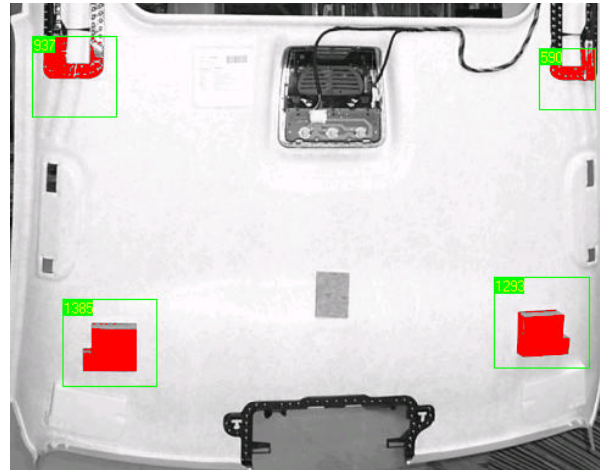
Every OK text can be assigned to a check characteristic, which can be output during an OK evaluation (for example: Type A).

The check areas can be freely parameterized in screen form, that means that freely-definable areas can be defined, that the search will be limited to.

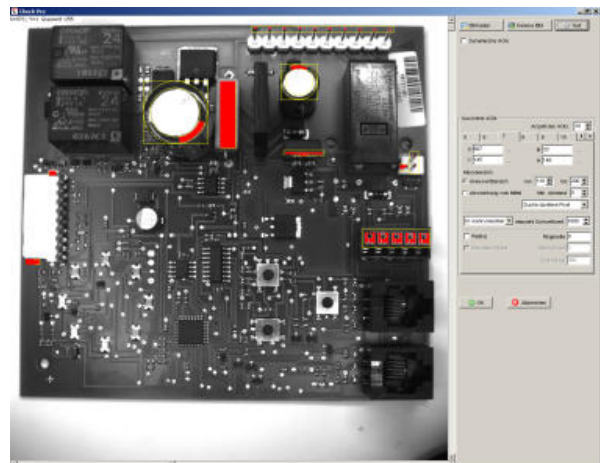
keeping an eye on quality

Technical details

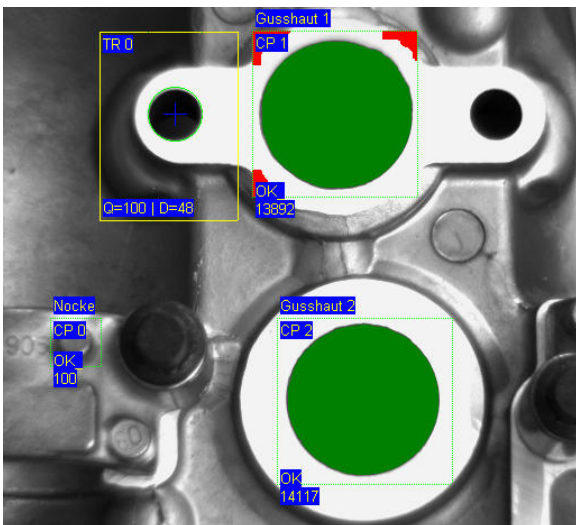
- For each image, up to 60 search areas can be defined, with 40 search characteristics each
- Freely-parameterizable search areas
- Check on the basis of a pixel search or a exemplar comparison (can be parameterized)
- Search areas can be duplicated with all settings
- Names can be assigned to search areas and search characteristics
- Free-running search function (continuous recognition) can be used,
- The background can be focused out, using a freely-parameterizable screen.
- A test function can be used to test the parameterized values. The test area also comprises loading an image series, in which search runs can be started with the parameterized configuration, which automatically go to the first (next) NOK (not OK) image. (Feature for effective learning).
- A results string with all search characteristics can be displayed
- A histogram function using the quality and the search results, for each AOI can be used
- For an exemplar comparison:
 - The quality and contrast for each characteristic can be parameterized
 - Various search modes are available: all, best, and first characteristic
 - A speed-optimized search can be selected.



Check for the presense of built-in parts



Layout check of circuit boards



Test function with indicated search results