Assembly Verification using Checkpoints and Pixel-counters with VisioRead.
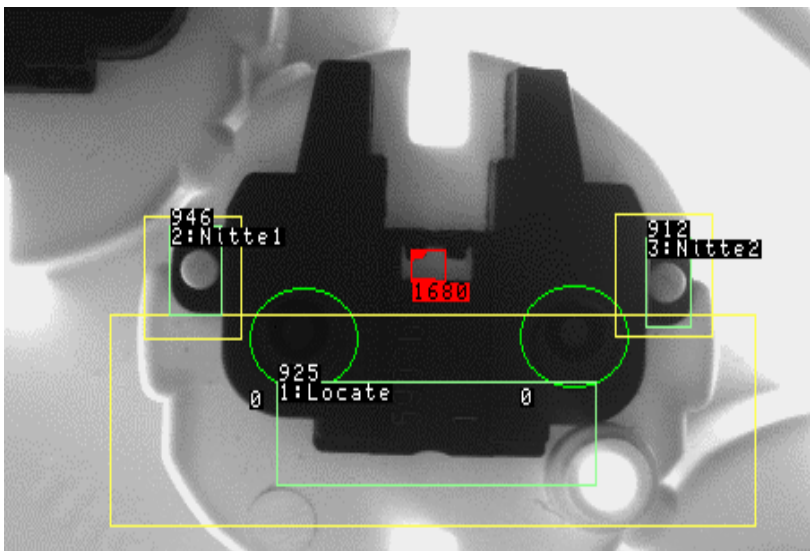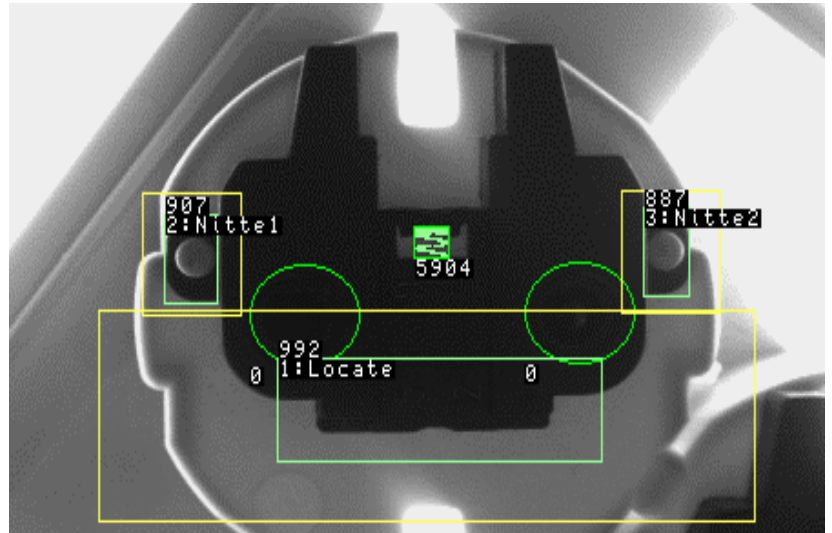
The VisioRead inspection tools can be combined to crate many complex and effective inspections.

Shown is a 230V socket outlet (rear side). The objective is to verify that:
- Rivets are mounted.
- Protection spring in place.
- Plug-holes are closed.

Product location.

The checkpoint tool is very effective, robust and fast, which makes it the preferred choice for product location.

A grey scale pattern of a characteristic feature on the assembly has been selected (labelled 'Locate' and enclosed by green frame). As a first step the system finds this pattern within the larger yellow frame. The found position serves as the origin for all other inspections.
The found contrast is used for dynamic adjustment of counter grey-levels.

Product inspection.

The rivets are inspected using 2 checkpoints one for each. The inspection criteria are:
- Rivets must be in the right place.
- Resemble model well enough.
- Have sufficient contrast.

The spring and the plug-holes are inspected using 3 pixel counters, 2 circular for the plug-holes and a small square for the spring.

The counters must find:
- The correct amount of pixels in the specified grey-level range