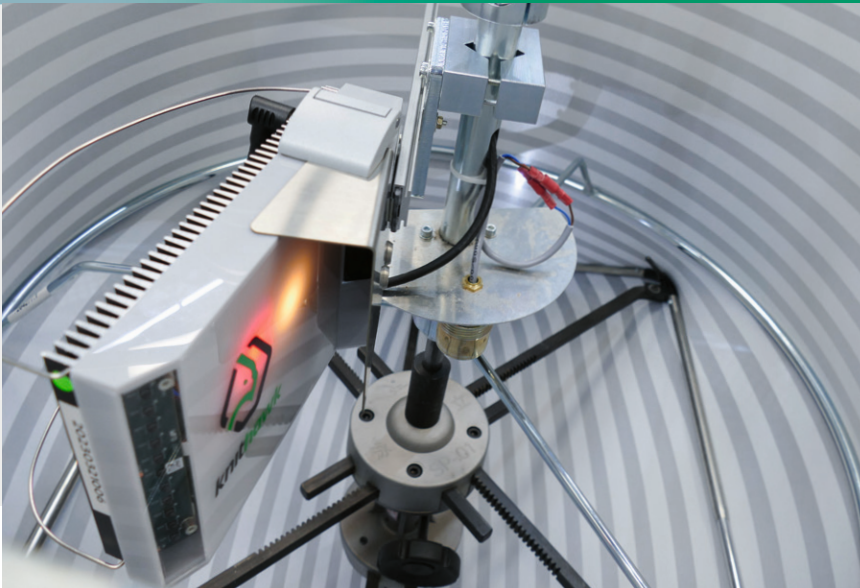


A watchful eye to detect knitting defects right where and when they happen



knithawk

our performance for your profit



- ✓ **Detects even defects not visible to the human eye**
- ✓ **Inspection right at knitting point**
- ✓ **Machine stops immediately after detection of defect**
- ✓ **All defects recorded in error log**
- ✓ **Very low installation effort**

Application:

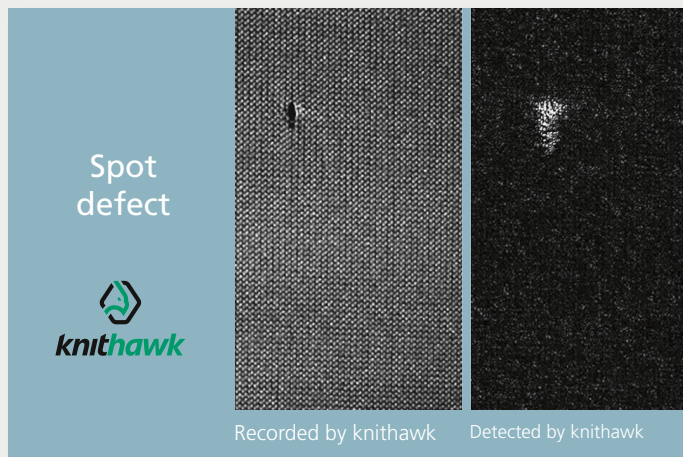
knithawk is a tool for optical textile monitoring during the manufacturing process. It monitors and detects defects in the knits right where and when they happen - at the knitting point. knithawk identifies imperfections such as spot defects, vertical defects, horizontal defects and defects in elastomeric plating in single jersey structures.

knithawk is positioned centrally on the machine's middle bar directly behind the knitting point and can therefore intervene promptly. Serious errors or frequent errors trigger an immediate stop of the machine. Errors not visible to the human eye are evaluated using a decision matrix. All defects are recorded in an error log.

knithawk consists of a compact camera unit that examines the knitted fabric using infrared light. It works independently.

In the absence of real-time control during the knitting process combined with a circular knitting machine's high productivity, large amounts of rejects can occur within a short period of time. With knithawk, there are fewer rejects and thus lower yarn and energy consumption. Costs from the subsequent processes of finishing and packaging also decrease.

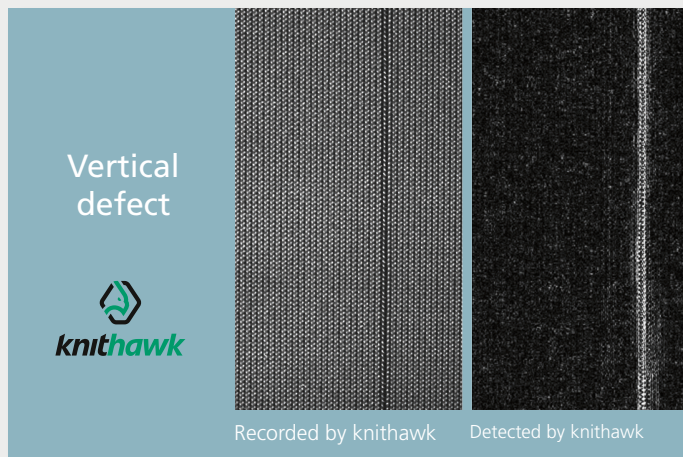
Defect classes detected by knithawk



Spot defects

There are various incidents of spot defects. Among the most common ones are:

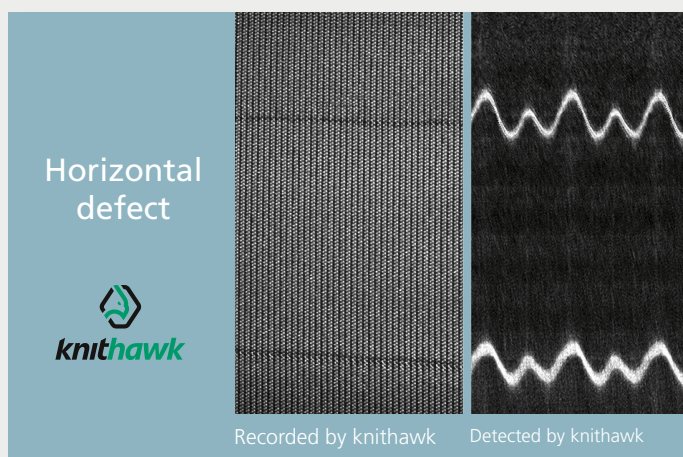
- Yarn breakage
- Thin or thick spot in yarn
- Foreign inclusion in yarn
- Lint or foreign inclusion in fabric
- ...



Vertical defects

Vertical defects, too, may come in a wide variety of incidents:

- Bent needle
- Heavily running needle
- Damaged knitting elements
- Damaged cylinder or dial
- ...



Horizontal defects

Possible incidents for horizontal defects are:

- Differences in yarn tensions or stitch length
- Missing yarn
- Thick or thin segments in yarn
- Needles in wrong position
- ...

Errors in elastomeric plating

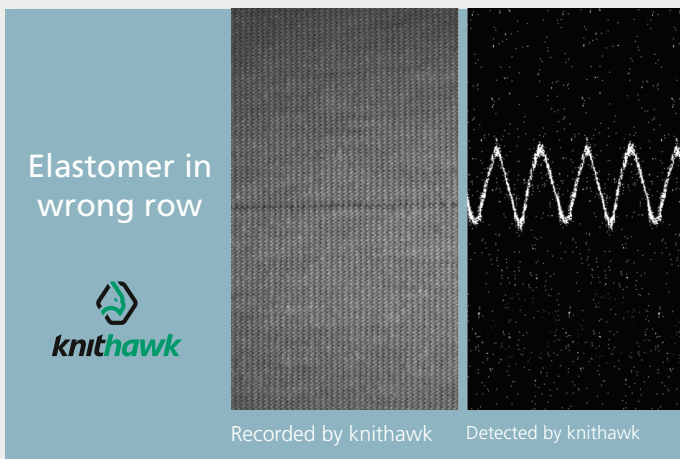


Elastomer missing

This type of plating defect appears in various defect classes. Possible occurrences are:

- Elastomer missing in entire row
- Elastomer partly missing in row

Such defects show as thin lines or segments in the fabric. **They are hardly visible to the human eye.**



Elastomer in wrong row

This plating error may also show in various defect classes, for the following reasons:

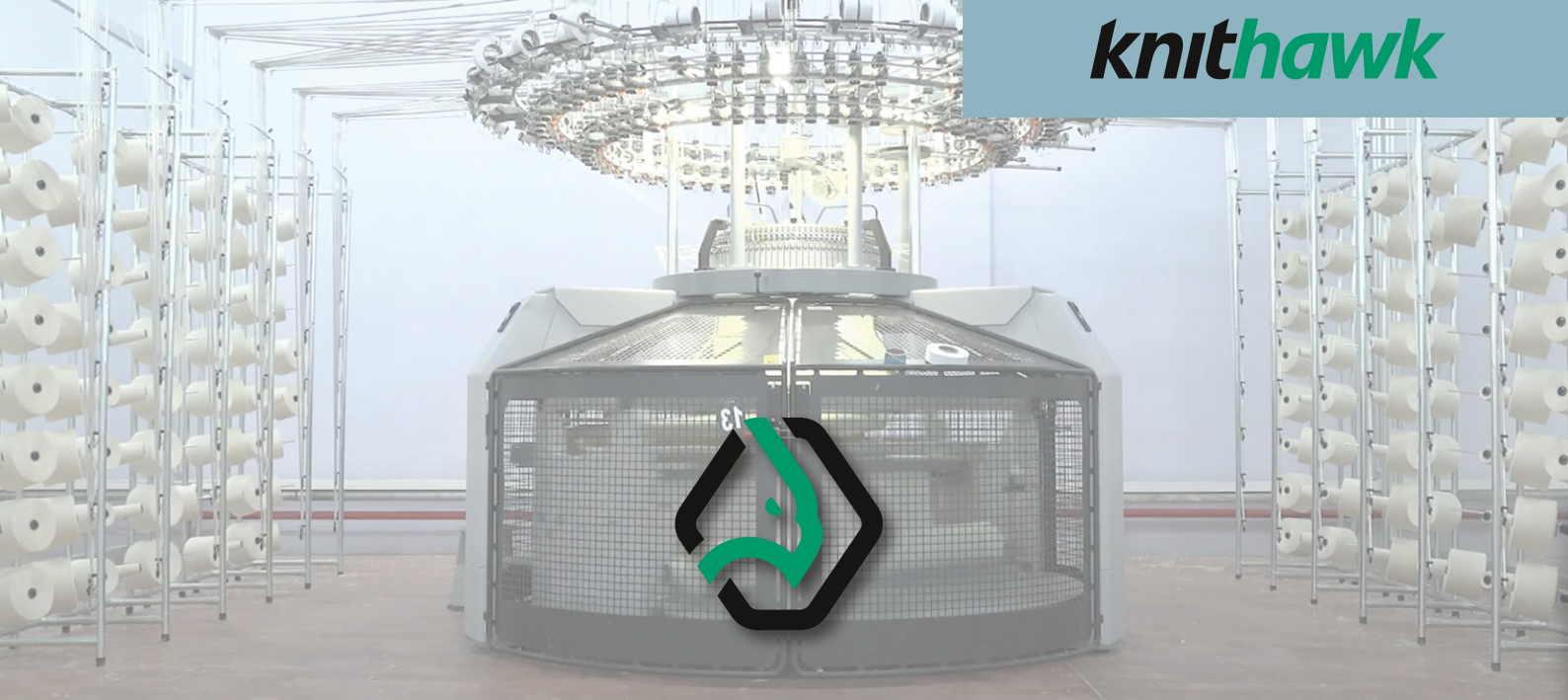
- Elastomer caught in wrong feed in entire row
- Elastomer partly caught in wrong feed
- Double insert (plating) of elastomers in one or more rows

Such defect usually show as thick lines or segments in the fabric. **They are hardly visible to the human eye.**



knithawk - A smart system by Mayer & Cie. with a big impact for sustainable fabric production.

- Savings on yarn and elastane
- Reduction of acreage, water and other raw materials to produce yarns
- Reduction of environmentally harmful chemicals
- Less electrical energy for production
- Less CO2 emissions, as rejects no longer have to be shipped



The most important facts for you at a glance:

Our feature	Your advantage	Your benefit	Photo/graphic
Detection of defects not visible to the human eye	Detection of errors before fabric inspection and finishing	Less fabric returns Lower CO2 footprint	<p>Human eye Knithawk detectet</p>
AI based self-learning system	Customized monitoring of each individual fabric style	Optimized error detection	
Defect detection right at the knitting point during production to trigger an immediate stop	Fewer fabric rejects	Less yarn wastage Lower energy consumption More profit	<p>knitting process monitoring start</p>
Automatically generated log report for each fabric role	Proof of quality status of fabric role Decision-making tool to determine further handling of fabric role	Higher value of fabric Potential cost savings Satisfied customers	<p>LOG</p>
Compact and independent system	Simple and fast installation Easy handling No cloud solution necessary	Short downtime for installation Low investment	

