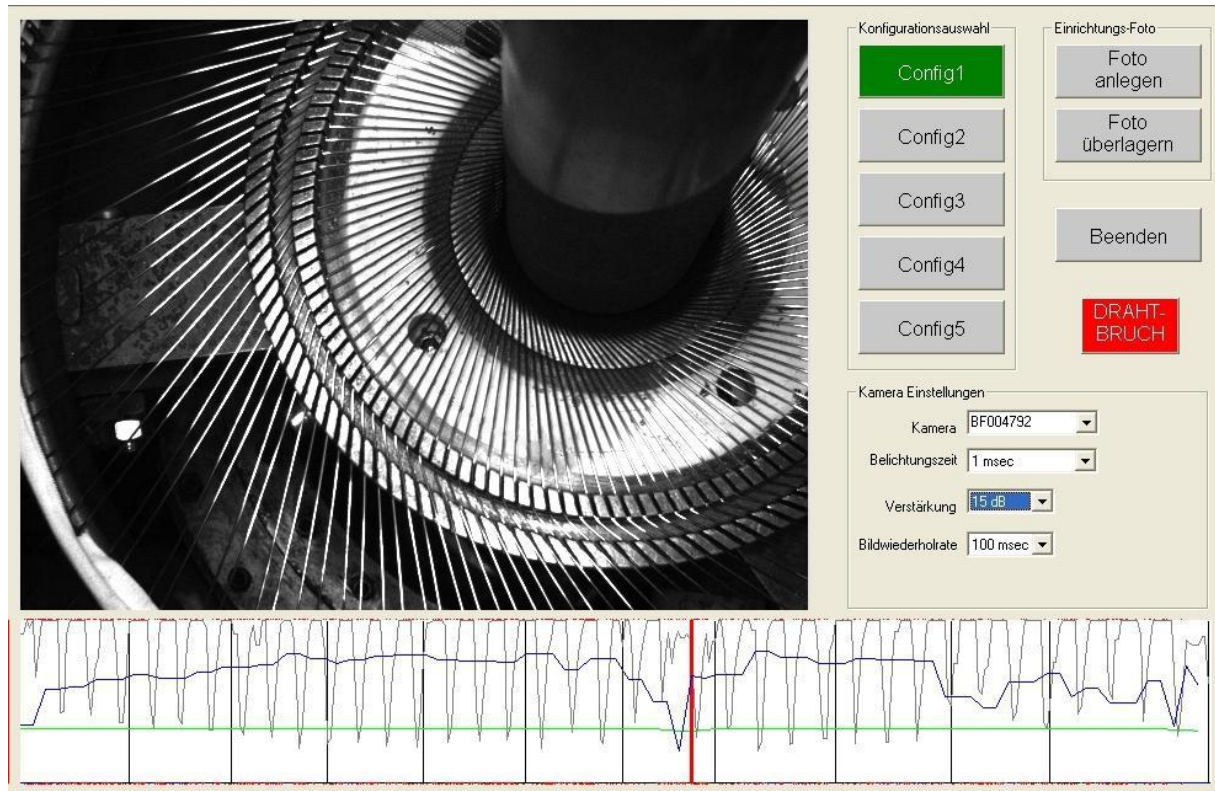


Broken wire detection on winding machine

The winding machine lays a wire mesh around a core to which is built up in several steps, a hydraulic hose. A broken wire creates a predetermined breaking point, which can result in a shortened lifetime of the hose.



The rotating reel disc is viewed by a camera. At times, the camera is covered by a revolving satellite system which is providing an insulating layer for the next step.

The software algorithm is adaptive. He recognizes changing speeds, shadowing by the satellite system different exposure situations. Due to the rapid image acquisition and processing is a redundancy check possible over several frames. This allows the reliable detection of a broken wire within a short time.

For accurate adjustment of the camera after a tool change the software can overlay a previously made image. The current image must be placed so as to cover only.

The user interface is optimized for touch screen operation.

For maintenance purposes the software can record video clips. This allows an optimization of the settings without running machine, or at the office workplace.