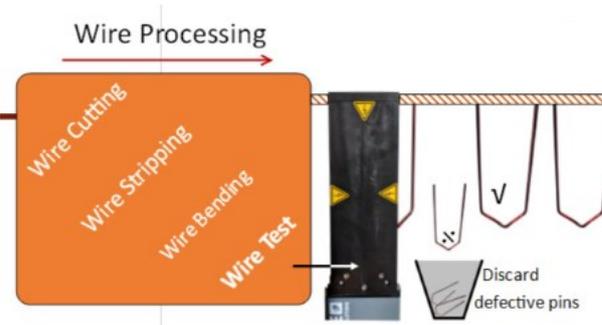


# Test of hairpins for E – Motors

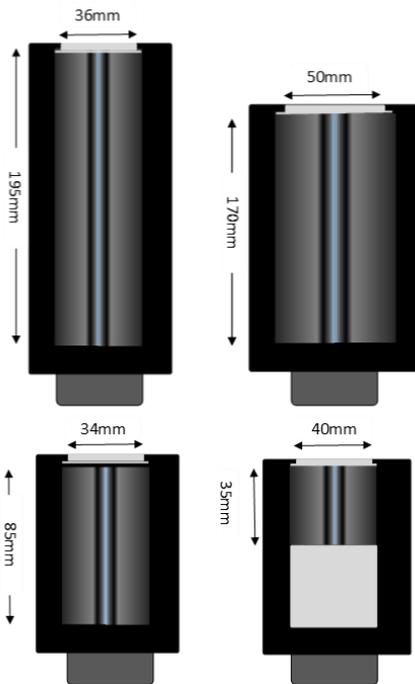
High voltage Continuity Tester



DSE Test Solutions was challenged by one of our customers to develop an in-line high voltage insulation tester for production of hairpin.

**Application:**

To know which hairpin having defects and sort those out in a fully automated way, is essential to avoid to scrap the final assembled E-motors and thereby lose production. The strong bending pushes the enamel wire to the limit and gives a high risk of defects such as cracks and pin holes. Also scratches and holes coming from defects in the hairpin forming and handling tools are critical. With the new developed HVC360SA tester, developed in cooperation with a manufacture of hairpins, it is now possible to test each hairpin 100% for cracks, pin holes and scratches by using a high voltage insulation test. The HVC360SA makes sure that no hairpin leaves the production line without individual testing giving a pass/fail signal. Implementing the HVC360SA makes it possible to increase production efficiency and product quality, to save time in end-testing and to monitor the manufacturing process.



**Hardware:**

The HVC360SA has electrodes with soft conductive brushes in contact with the wire. In the measuring head, the build-in controller has individual pre-set for both High Voltage tension and the level of threshold. When the hairpin passes through the conductive brushes, any current leakage being measured will reflect the insulation properties of the enamel and trigger an alarm output, if its over the set threshold. The technology is the same as the former HVC360 Flexible which has been on the market for many years and is well known within the wire manufacturing industry.

**Key features:**

- Full 360 degree surface coverage of the wire
- Wide range of electrodes available for different hairpin sizes and shapes.
- No damage from sparks (low power design)
- Wide output test Voltage range 350 VDC to 6000 VDC
- Low tension means no damage of the enamel because of the very soft conductive brushes
- Tailor made for manufactures of hairpins

Full control from PLC

