High precision trimming is decisive for producing high quality strip. The condition of the knife and detection of knife breakouts are two of the most important factors for trimming. Critical conditions should be identified automatically.

**YOUR CHALLENGE**

In order to maintain high product quality and plant availability, the trimming shear must be set up in a proper way. By reducing the time required for inspection of the edges (prior to and after trimming), plant availability can be extended.

The early detection of defects results in less scrap and less damage to rollers. Being able to predict lifetime helps optimize and reduce operator maintenance efforts. Without an automatic inline inspection it is nearly impossible to obtain a complete overview of what exactly happens during cutting processes at the trimmed strip edge. Even changed or modified knife settings have an enormous impact on the edge quality.

A simultaneous inspection of both sides of the strip as well as a reduction of knife-parameter optimization-time would increase total plant efficiency.

Today’s strip edge inspection is done by the operator. So the strip accuracy depends highly on the experience of the operator, additionally the manual strip inspection is very dangerous as the operator needs to get very close to the strip.

Stopping the line due to inspection activities also influences productivity and increases the risk of additional defects on the knife and the strip.

**OUR SOLUTION**

EdgeMon enables the simultaneous inspection of the trimming process at both sides of the strip at full plant speed. Magnified images are visualized, knife breakouts are detected automatically and warnings are issued in the event of generally worse edge quality. Cut-break ratio and burr are measured.

Inspection results and images can be forwarded to a human-machine interface, TCP/IP or hard disk and stored. EdgeMon is suitable for pickling lines and finishing lines. EdgeMon is available as stand-alone system as well as integrated to PT side trimmer.
INSPECTION TASKS
EdgeMon has been developed for the visualization of strip edge quality. Knife breakouts are detected and other defects are categorized according to their general quality. Burr and cut-break ratios are measured by the tool, and warnings and alarms are issued automatically:

The system collects images from the strip irrespective of the strip speed. With this feature, the recorded and displayed file reflects the current condition of the knife.

Thanks to the image processing algorithm, the images can be inspected and evaluated with respect to strip edge quality. Based on this evaluation, decisions can be made regarding knife changes in case of breakouts or knife setting adjustments.

FEATURES
• 0.3 – 6.5 mm strip thickness
• Up to 750 m/min strip speed
• Working distance up to 800 mm
• Synchronization with knife circumference
• Detection of burr from 0.3 to 3 mm
• Knife breakouts > 2 mm+/−20 MPa
• Relative accuracy 0.1 to 0.2 %

ADVANTAGES OF EDGEMON
• Avoids defects on rollers
• Avoids strip breakage due to knife breakouts
• Increases efficiency of the plant through the simultaneous inspection of both sides at full speed
• Reduces time for knife parameter optimization

Visualization of different strip edge situations