



OFF-GAUGE OPTIMIZER (OGO)

YIELD INCREASE BY DECREASING THE STRIP OFF-GAUGE LENGTH

The quality package Off-Gauge Optimizer (OGO) focusses on minimizing the head end off-gauge length.

Head end off-gauge length is defined as the strip length from the weld to the strip segment from which the final thickness deviation sustainably stays inside a tolerance band of ½ EN10131 which is approx. ±3% of final thickness.

CHALLENGE

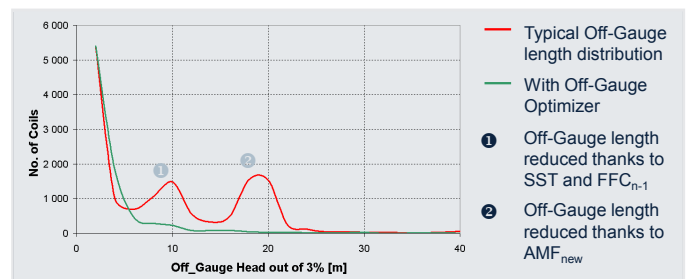
Today's challenging markets require producers to improve continuously their operations with respect to quality, yield and production costs. The key issue today is to identify the right improvement measures as investment budgets are very restricted. One of the most obvious solutions is to avoid all additional processing costs which have a direct impact on the final cost figure such as the additional reprocessing costs of scrap resulting from off-gauge lengths.

To achieve this target, Primetals Technologies proposes a solution involving low investment costs and a fast ROI derived from the so-called "hidden potentials" of your mill equipment.

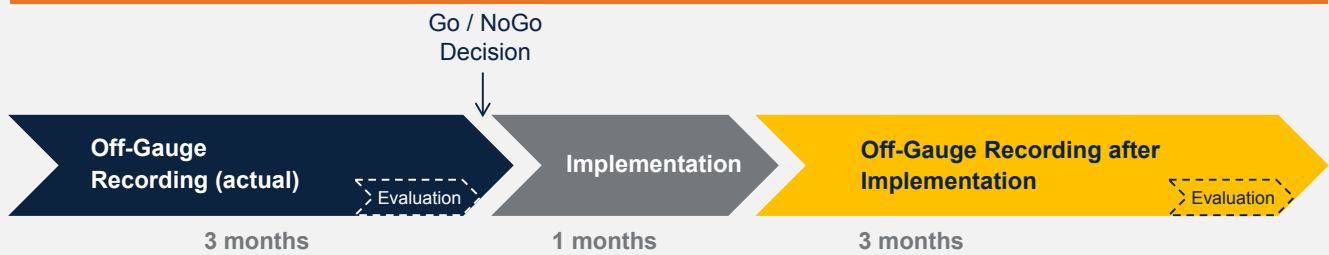
OUR SOLUTION

Based on the perfect combination of technology, process control and instrumentation, the OGO features the smart implementation of the control algorithms of a tandem cold mill based on the mass-flow principle.

The OGO significantly reduces the average off-gauge lengths to approx. 8 m as verified at our reference plants. For a plant with a production of 1,6 million tons per year, this corresponds to an annual increase in yield of approx. 6,400 tons.



Implementation during normal mill operation without any influence to the production



PRODUCT FEATURES

The OGO modules are:

AMFnew: Advanced Mass Flow AMFnew controls the mass flow from the mill entry to the mill exit. AMFnew assures very stable rolling conditions so that the monitored thickness errors can be kept to a minimum. The targeted thickness is achieved immediately after the end of the dynamic rolling-change function.

SST, Soft-Sensor for Strip Thickness: A soft-sensor-based roll-gap-thickness estimator perfects the performance of OGO during weld-seam-transition rolling. Interstand roll-gap thicknesses are modeled by means of the strip speeds and one initial strip-thickness measurement, e.g., behind the first stand .

FFCn-1 : Feed-Forward Control at the last but one stand FFCn-1 decreases thickness errors occurring from, for example, tension disturbances during weld-seam rolling. Thickness errors are determined by the SST or an existing gauge in front of the last but one stand (SPM mode).

IMPLEMENTATION

- Recording of actual off-gauge lengths during normal production
- Back-up of existing software
- Installation of OGO productivity tool
- Implementation of OGO during a normal scheduled maintenance standstill
- Implementation of strip-speed measurement devices
- Recording of new off-gauge lengths during normal production
- Common evaluation of the achieved off-gauge reduction

MAIN BENEFITS

- **Higher throughput:** the off-gauge optimizer reduces the average off-gauge length significantly (approx. 8 m verified at our reference plants)
- **Less scrap at strip head end** means higher yield
- **Energy & environmental savings:** due to the avoidance of scrap processing
- **Fast ROI:** amortization less than 1 year

FIELDS OF APPLICATION

- CTCM, PLTCM: Continuous Cold Rolling Tandem Mills

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