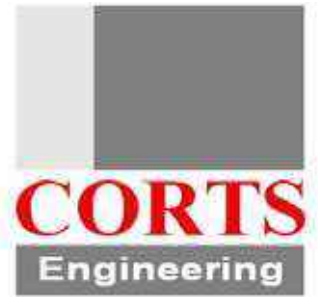


Engineering Services and Solutions for Rolling Mills



Leussink

Think. Solve. Engineer.

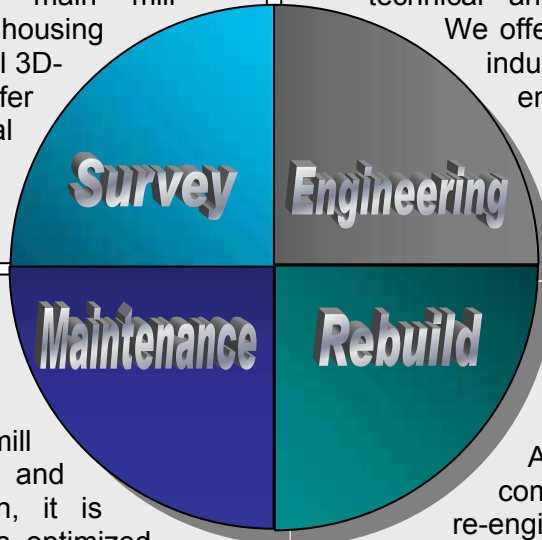


Survey Strategy

In order to evaluate the status of any given rolling mill, a general Mill Audit is necessary. The basis for the Mill Audit is a precise survey of the main mill components, including the housing and chock fleet. Our optical 3D-metrology allows us to offer the precise geometrical inspection of those basic mill components.

Engineering

Once the results of the Mill Audit are available, the next step is to optimize the status of the mill components from a technical and commercial standpoint. We offer our fundamental mill and industry expertise in the re-engineering, optimizing and upgrading of the basic mill components.

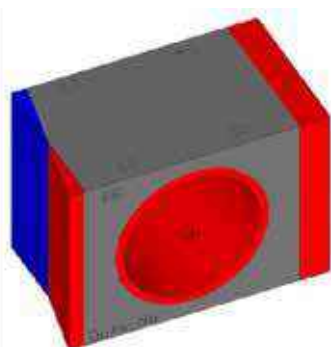
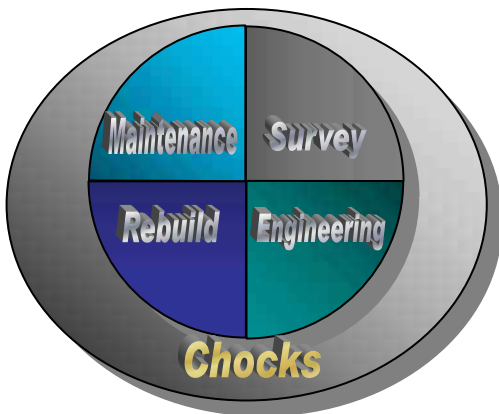


Maintenance Strategy

As soon as all mill components are rebuilt and back in perfect condition, it is imperative to maintain this optimized state for as long as possible. With our Component Management System we offer the perfect information base for this demanding task.

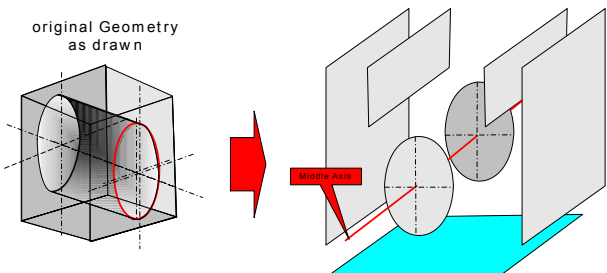
Rebuild

After all relevant mill components have been re-engineered they must be repaired and rebuilt. The chocks may be repaired offsite, but onsite operations are necessary for the housings. We can organize and supervise both these tasks.

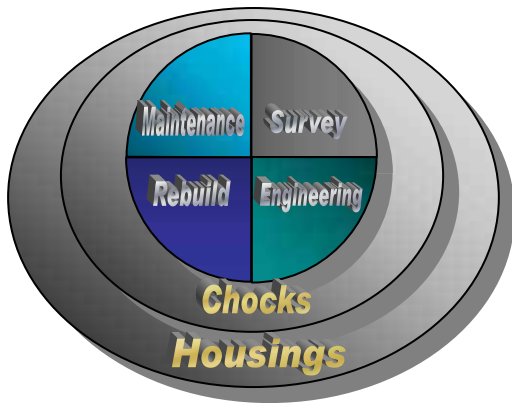


Solutions for Chocks

Chocks are directly responsible for keeping the rolls in place. Thus, they have the main influence on the tools of any rolling mill. The central axis of any kind of chock is the basis for the overall mill geometry, and all relevant surfaces are dependent upon the accuracy of this axis.



We offer the 3D-survey results in a 3-dimensional CAD-format, which facilitates interpretation of the results across the different areas of responsibility in a rolling mill.



Solutions for Housings

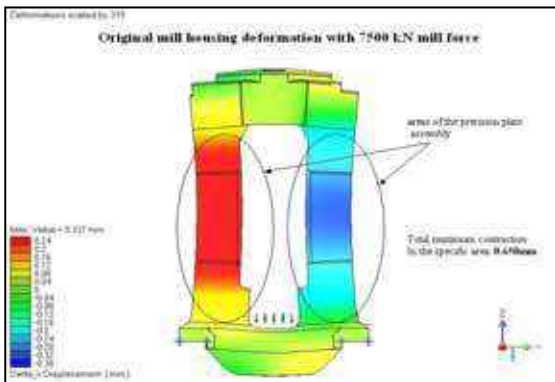
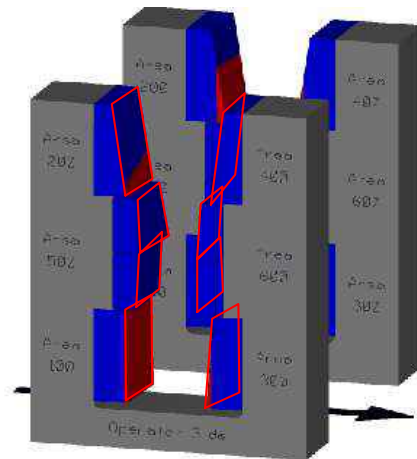
The housings of any rolling mill are the foundation of the rolling process, keeping the roll sets in place and controlling the rolled geometries.

Detailed knowledge of the precise 3D-geometry of the mill window with all relevant bearing surfaces is thus imperative for a controlled, reliable rolling process.

Mill Window Analysis

With our proven optical 3D-housing survey system, it is possible to precisely measure the mill window in its given position relative to the mill foundation and pass line.

The results of this are presented in a 3D-projection, magnifying the deviations from the optimum. These are geometrically analyzed, and potential consequences for the accuracy and reliability of the rolling process are made visible.



GAP-Optimization

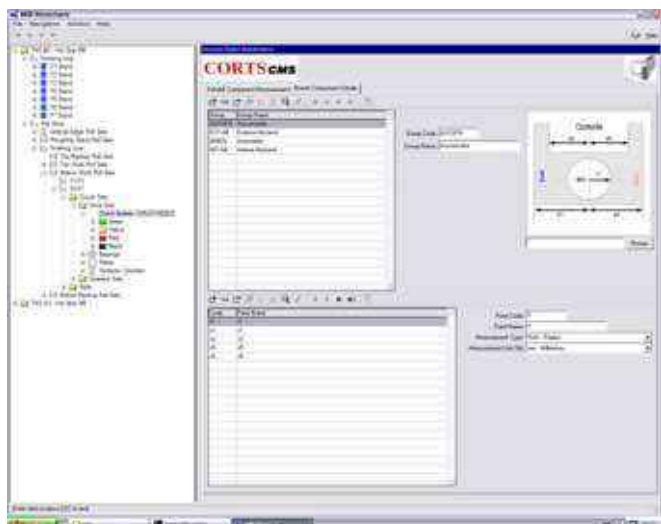
We offer a detailed Finite Element Analysis (FEA) of the housing which permits optimization of the geometrical condition of the mill.

Precise measurement of the slimming of a mill stand under various rolling forces makes it finally possible to minimize the gap between the bearing surfaces of the housings and chocks.

Component Management

The overall survey and ongoing maintenance of housings and chocks creates a tremendous amount of information and complex data. And this data only has value if it is constantly updated, analyzed, interpreted and actively used for all techno-commercial decisions.

We created our RFID-based Component Management System (CMS) application, which features robust business logic and secure intranet/internet access.



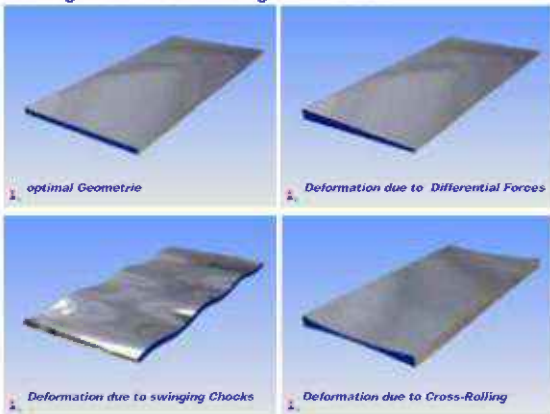


Coil Inspection

For all continuous mill types we offer an optical 3D-metrology to inspect the quality of the coils via laser, measuring the 3D-profile of the coil front as an important indicator for high quality rolled products.

Objective and reliable inline measurement and control is the only reliable foundation for your future quality.

possible Results of an increased GAP between the Bearing Surfaces of Housings and Chocks



Summary

Our structured and logically linked product spectrum allows us to offer you a unique set of state of the art tools for analyzing the status of a mill, optimizing the overall condition of the basic mill components and maintaining the mill to the highest possible quality level. And in the end, "it's much cheaper to keep her".....

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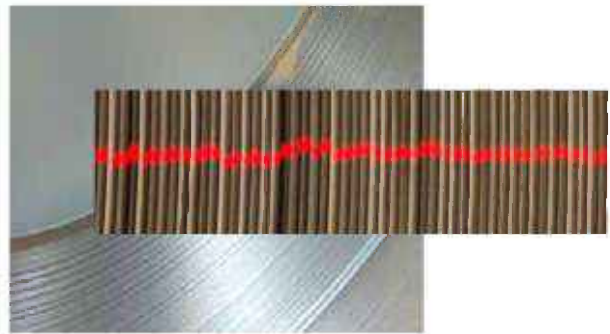
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GAP-Control System

Having precise information about the current geometric status of the mill window and its matching chocks necessitates continuous monitoring of the gap between housings and chocks.

Developed and patented for this very purpose, our online GAP-Control System continuously measures the distance between the bearing surfaces of housings and chocks and delivers precise information about the 3D-position of the roll sets during the rolling campaign of every single coil.



Our holistic approach makes it possible to create mill conditions which help avoid cross-rolling, cobbles, profile errors – and finally scrap. The end result is reliable, predictive maintenance, using state of the art technology. And it makes life easier for those with the high level responsibility of increasing the overall productivity and quality of the mill and reduces its lifecycle costs over the long haul.



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