

For further information, please contact:

Press Relations: Sabine Hergenroder, +46 31 337 6418; +46 705 77 6418, sabine.hergenroder@skf.com

Major Chinese steelmaker achieves cost, quality and environmental performance improvements with SKF ConRo roll line units

High reliability, extended service life and comprehensive remanufacturing program keeps continuous casting machine working longer for less.

Gothenburg, Sweden, 27 February 2017: China Baowu Steel Group Corporation, the country's largest steelmaker, formerly known as Baosteel, is driving up the performance and reliability of its continuous casting machines using SKF ConRo roll line units.

CCM4 is a two-strand continuous casting machine first installed at the company's Shanghai plant in 2006. The machine produces 2.8 million tonnes of carbon steel slab every year, but was suffering quality and productivity issues due to the early failure of the bearings in the horizontal segment of its 1750mm wide roll line. A combination of overload and the ingress of cooling water into the bearings meant the average service life of a roller on the line was only 3.4 months. Blocked rollers were a source of quality issues in production and the need to regularly replace the units was a significant cause of production downtime.

To address the issue, Baowu Steel Group replaced two roller units on the line with SKF ConRo technology. SKF ConRo is a robust, self-contained, modular roll line that includes bearings, seals, housings, grease, roll bodies and water connections. The design uses a patented sealing system that protects bearings from ingress of water and contaminants.

The installation of the new ConRo units on the CCM4 machine has more than tripled the service life of the rollers, to an average of 14 months. Thanks to their greater longevity and reliability, the company recouped its investment in ConRo technology in less than six months.

Now the original ConRo units are enjoying a second life, thanks to SKF's tightly controlled remanufacturing program. At the end of their first period in service, the units are returned to SKF in Shanghai, where they are remanufactured to stringent specifications. The process includes replacement of bearings and seals and requalification of the body, roll mantle, hosing and sleeves. The remanufacturing program also provides an opportunity to upgrade some components, based on analysis of their performance in production.

The first remanufactured units were returned to Baowu Steel Group in October 2015 and have now completed more than a year in service – delivering the same level of performance as new units, at only 30 percent of the cost.

Remanufacturing offers important environmental benefits too, with a significant reduction in energy and raw material consumption, compared to the production of new equipment.

“The SKF ConRo units have helped us to cut unplanned down-time and reduce production costs,” says Jianqing Yao, Director of equipment at Baowu Steel Group Corporation’s Shanghai steelmaking plant. “The availability of the remanufacturing program has extended those benefits, allowing us further reduce the overall operating cost of our machine.”

Baowu Steel Group has worked closely with SKF since the early 1990s, and the two companies have extended their collaboration with a series of strategic partnership agreements since 2005. Thanks to SKF’s continuing investment in its production and service capabilities in the country, Baowu Steel Group’s most recent order for an additional eight units were the first ConRo units to be manufactured in China.

Watch more about the SKF ConRo here: <https://www.youtube.com/watch?v=4FeOfgGZ-SI>

Aktiebolaget SKF
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SKF is a leading global supplier of bearings, seals, mechatronics, lubrication systems, and services which include technical support, maintenance and reliability services, engineering consulting and training. SKF is represented in more than 130 countries and has around 17,000 distributor locations worldwide. Annual sales in 2016 were SEK 72 787 million and the number of employees was 44 868. www.skf.com

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