

Case: Jindal SAW Ltd pellet plant, India

50% longer pump life, 40% lower costs

Jindal SAW Ltd needed expertise for handling its ever-increasing amounts of slurry generated by the beneficiation process. Since the slurry wore heavily on its metal pumps, the company was badly and urgently in need of an alternative. It is here that Metso pitched in with a change that produced immediate results: replacing the metal casing with rubber liners. It increased the life of the pumps by more than 50%.

Increased uptime and wear life

JSL has a plant at Bhilwara in Rajasthan, an area with rich magnetite deposits. The deposits are rich in quantity but low on quality and have only 30-grade iron ore content. But, thanks to JSL's beneficiation process, the plant manages to supply good quality pellets of approximately 65-grade to its customers.

The project shook hands with Metso in 2013 when the latter was selected as a partner to provide crushers, vibrating feeders, screens and slurry pumps. The fleet included Metso Nordberg® C140™ primary jaw crusher, Metso Nordberg® GP300S™ secondary cone crusher, Metso Nordberg® HP4™ tertiary cone crusher (4 off) and Metso HM200 pumps along with vibrating feeders and screens.

Increased wear life of components

In JSL case, the ore mined from the magnetite iron deposit is crushed into small fractions i.e. 0-6 mm and sent to the grinding circuit for the iron ore beneficiation. The ball mill discharge leads to large amounts of slurry during the beneficiation process. The project rightly opted for the Metso slurry pumps which were installed to efficiently handle the slurry.

The performance of Metso slurry pumps far exceeded that of its competitors. Measures were taken to further enhance the productivity. Initially, the pumps supplied were HM200 model which wore out in two months due to the presence of silica. An analysis determined that the metal casing was wearing excessively on the pumps due to the high silica content in the slurry, which was approximately 10% as compared to the usual 5%.



Jindal SAW Ltd in brief

Jindal SAW Limited (JSL) is a leading global manufacturer and supplier of iron and steel pipe products, fittings and accessories with manufacturing facilities spanning across India, USA, Europe and the UAE.

The technology-driven Jindal SAW employs about 69,970 people across the globe. They are part of the EUR 16.9 billion O.P. Jindal Group, one of India's leading industrial houses which is ranked as a leading indigenous steel producer and exporter.



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Given the situation, Metso decided to replace the metal casing of the slurry pumps with a rubber lined pump, which enhanced the life of the pump extensively, saving the JSL huge costs.

Angshuman Bandyopadhyay, Deputy General Manager at the Beneficiation plant at Jindal SAW Ltd., says: "As per instructions, the Metso team provided a solution for handling the slurry that was becoming problematic for us. In addition, the team also presented us with various options, which helped us in encountering some initial wear problems arising from the nature of our slurry. However, Metso installed the HR pump with rubber liners which increased the wear life tremendously."

The benefit of this conversion increased the life of the wear components from two to six months, saving JSL more than 50% operational costs. In addition, Metso solutions saved JSL plant shutdown costs, ease of maintenance and also decreased labor costs.

Metso supplied the pumps with a conventional expeller seal arrangement, which requires no gland seal water lubrication, to replace the earlier full flow water gland sealing arrangement. This option functioned extremely well, saving JSL 318 liters of water per minute (LPM) on all pumps. Bandyopadhyay added, "Promptness in providing different solutions is what makes Metso stand out tall and distinct from others."

Exceeded targets

The results experienced by the company clearly exceeded JSL targets and provided the company with increased uptime and wear life.

Thanks to this bond of trust and dependability, JSL is now using Metso's expertise and advanced technological solutions for all its future expansion plans and will soon be installing more HR200 pumps in its beneficiation system.

Optimizing pump selection and performance to lower operating costs

Metso offers a wide range of world class horizontal heavy duty slurry pumps for abrasive pumping applications. Specially developed features provide trouble-free operation and a minimum downtime improving the cost effectiveness of the operation.

Our focused product development combined with over 60 years of experience from thousands of applications has led to continuous improvements in our products. The benefits to customers are numerous but the most significant is the life time cost saving that will be achieved by using horizontal slurry pumps by Metso.

Metso experts at your service

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