

## Manufacture of the Loesche 3,2+2 Cement Mill vertical gearbox transmission sets and assembly supervision on site



**Operating background** The **Cementos San Marcos** plant, which officially began operations in 2012, is located in the municipality of Yumbo. It is in the town of San Marcos Valle del Cauca, Colombia and currently has a production capacity of 12,700 tons per month of Portland Cement.

Since 2016, it has had a Loesche 3,2+2 primary mill with a Santasalo vertical reducer of 1800 kW.

**The case** *The Santasalo gearbox of the Loesche mill has been running at a reduced load for some time due to incipient damage to the bevel gear pair and planetary stage. This situation evolved into the catastrophic failure of the input gear set bevel gear-pair, ring gear, and sun shaft.*

**Technical Solution** ABS inspected all components in detail and concluded that the manufacture of a new bevel gear spar and planetary stage gear set using state-of-the-art materials, heat treatments, and the defining an optimized gear microgeometry that would increase the gearbox reliability.

Cementos San Marcos decided to follow the recommendation and entrusted ABS with the manufacture of the entire gearbox transmission set and the on-site supervision of the assembly of its components with specialized engineers from our factory in Italy, MGS Gears.



## Execution of the work

ABS programmed the following sequence of works:

- The inspection of all the components associated with the failure.
- On site Dimensional survey.
- Shipment of the damaged parts to the MGS Gears factory in Italy for analysis and dimensional survey.
- Advisory service for the assembly of the parts and verification of fine adjustments to guarantee the reliability of the gearbox.

Once all the gearbox parts were manufactured and tested in our factory in Italy, they were sent to the plant in Colombia. Then the assembly was planned with establishing a 12-day period of joint work between ABS and Cementos San Marcos. It is worth highlighting the magnificent collaborative environment between both teams in meeting the level of intensity, precision, and detail necessary to achieve the adjustments and tolerances required by the AGMA standard.

**Another success story** When there is the experience, capacity, and predisposition to collaborate with highly qualified professionals and work actively to integrate and analyze the different visions, there is only one result: the achievement of the objectives set in the estimated time. Cementos San Marcos now has completely refurbished equipment, repowered and ready to perform at full capacity and with full guarantees.



## ABS and MGS GEARS, technical excellence for heavy industry

For more than 20 years, we have been offering products and engineering solutions for all types of industrial drives such as Ball Mills, Rotary Kilns Dryers, and Cangilone Elevators, using our custom manufactured gearboxes and components able to adapt to any mounting requirements, space availability, torque stresses, required ratios, etc. We have a wide range of special bearings and power transmission solutions for the CEMENT industry that contribute to optimizing your production processes and extending the life of your industrial equipment.



Septiembre de 2021

Atlantic Bearing Services LLC (ABS)  
Miami, Florida  
USA



CERTIFICACION DE SATISFACCION DE PRODUCTO-SERVICIO.

Estimado/a Atlantic Bearing Services LLC (ABS):

Por medio de la presente nuestra empresa CEMENTOS SAN MARCOS SA desea expresar nuestra satisfacción y conformidad con los trabajos realizados por ustedes para recuperar el reductor vertical Santasalo 1800 KW correspondiente al Molino de Cemento Loesche 3,2 +2 de nuestra fabrica del corregimiento de San Marcos en el Valle del Cauca, Colombia. Los trabajos mencionados se describen a continuación:

- Inspección, evaluación y relevamiento en sitio de información correspondiente a todo el tren de engranajes de la etapa cónica, ejes, acople y etapa planetaria completa del reductor antes mencionado.
- Fabricación de todos los componentes señalados anteriormente en marca MGS, Gears, Italy.
- Servicio de asesoría de montaje de componentes y verificación de ajustes y tolerancias de acuerdo con normativa AGMA.

Cementos San Marcos SAS declara que los trabajos fueron recibidos a satisfacción y recomendamos Atlantic Bearing Services como proveedor confiable en trabajos similares.

Atentamente,



Ing. Rodolfo Jaraba  
Director de Mantenimiento  
Cementos San Marcos