Industry: Power generation





Schaeffler Global Technology Solutions

Together we move the world

# Quick Reconditioning of a Rotor Bearing in an Air Preheater

The customer is a leading power generating company in Germany and Europe. The company's activities comprise the production, transport, trading and sale of power and gas.

# **Challenge for Schaeffler**

Air preheaters in a power plant are used for preheating the air needed for the combustion process. If a preheater fails due to technical problems, that often means that the entire power plant unit has to be shut down. The air preheater is supported in a spherical roller thrust bearing. In the case in hand, this bearing was so badly worn that one of two power plant units had to be shut down. As a consequence the production was reduced by 50 percent. The bearing had to be reconditioned immediately. So the customer asked Schaeffler to recondition the spherical roller thrust bearing as quickly as possible. Purchasing a new bearing seemed to be difficult as, at the time, such bearings were hard to obtain at short notice.

# **Schaeffler Solution**

Schaeffler used all available resources to carry out the bearing repair work in the shortest possible time. The exact schedule was as follows: The bearing left the customer's power plant at 3:00 pm and arrived at the Schaeffler reconditioning workshop, which is 150 km away, at 7:00 pm. The reconditioning work, which – due to the extent and severity of the damage – turned out to be quite extensive, was carried out during the night. Among others, it included the regrinding of all inner and outer races. The rolling elements, cage and lip ring were reworked manually. Within 16 hours, the repair work was completed so that the reconditioned bearing was sent back to the customer at 11:00 am the next day where it arrived at 3:00 pm on the same day.



**Technical Information about the Bearing** 

#### Bearing type:

Spherical roller thrust bearing 294/900E.MB

**Bearing size:** 

D = 1520 mm

Mass:

2 705 kg







Rolling element before and after reconditioning

Outer race before and after reconditioning



FAG spherical roller thrust bearing with brass cage

### **Customer Benefit**

Every hour the power plant operates at only 50 percent of its capacity costs the company 30 000 euros. Thanks to the Schaeffler reconditioning team's flexible commitment, the customer was able to minimise that period. Only 24 hours after the bearing had been dismounted from the preheater, it was delivered back to the customer, reconditioned and fully serviceable again. The total cost of this Schaeffler service amounted to 64 000 euros. Even if a new bearing had been available, the downtime costs and delivery time would have been significantly higher.

	New bearing	Reconditioned bearing	Savings
Downtime	3-5 days	24 hours	2-4 days
Downtime costs	up to € 3,6 M	€720000	up to € 2,9 M
Bearing price	€ 72 500	€ 64 000	€ 8 500
Total savings:			up to € 2,9 M

# Technical Information about the Solution

#### Bearing reconditioning (Level III):

- Washing
- Disassembly
- Examination
- Measurement
- Polishing of inner and outer races
- Vibratory grinding of the rolling elements
- Manual reconditioning of the lip ring cage
- Etching of the cage
- Assembly and packaging

### What's special

With this exceptionally fast repair Schaeffler has proven once again its consistent customer orientation.

