Customer reference case

Hospitals/buildings

HVAC end-user

Direct driven fans

Hybrid bearings

Fan installation at Sunderby hospital

Daytime service at Sunderby hospital

The challenge

Sunderby hospital in northern Sweden is a modern building with around 150 fan installations. As in other modern buildings, the fans, which are equipped with variable frequency converters, are operated at maximum capacity. The variable frequency converters are used to control airflow in order to reduce energy consumption and operating costs.

The motors in these direct drive fans were failing prematurely and had a mean time between failure (MTBF) of 3 – 4 years. To add to the replacement costs, hospital regulations prohibited maintenance during the day, requiring more expensive labour costs at night. It was estimated that each motor replacement was costing upwards of 440 €.

Solution and savings

Working with the service consultant for the hospital, SKF service engineers were able to determine that stray electric currents from the variable frequency converters were damaging the bearings, causing them to fail prematurely.

To solve the problem, SKF® hybrid bearings were recommended by the service engineers. Their recommendation to use SKF hybrid bearings and not INSOCOAT® bearings, which can also provide protection against stray electric currents, was based on the size of the motor.

About hybrid bearings

SKF hybrid bearings have been proven to last 2 – 4 times longer than standard all-steel bearings. This is due not only to the electric insulating properties of silicon nitride, but is also due to the fact that hybrid bearings can operate longer than all-steel bearings under poor lubrication conditions.

Savings

The total package, bearing investigation, recommendation and exchange plan will enable total savings of 11 000 €/year at Sunderby hospital, once all fans are upgraded.

Operating data

Power:	5,5 – 11 kW
Speed:	1 450 r/min
Bearings:	62 and 63 series HC5C3WT

Customer advantages

✓ Decreased maintenance costs
✓ Reliability, security – predictable operation
✓ Full advantage of frequency converter features
✓ Long service life

Financial outcome over 5 years

Considering 150 fan installations
✓ Initial investment (bearings) 30 000 €
✓ Total savings 55 000 €

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