

# COMFORT BEARING ON HEAT RECOVERY

**CASE STUDY:** SKF  
**APPLICATION:** Heating, Heat Recovery, Industrial



## The Background

In Gloucestershire, SKF manufactures high-performance bearings for military and commercial aircraft engines, including the new generation of 'super-jumbos'. To ensure strength, these bearings are hardened by super-heating them to 1100°C. This process generates massive quantities of waste heat, providing a golden opportunity to cut fuel bills and contribute to sustainability by recycling the energy. Unico's high-velocity forced air heating was selected as the key component of SKF's heat recovery plan.

## The Solution

After hardening in a vacuum furnace, bearings are cooled by quenching with pressurised nitrogen gas. Following this process, heat recovery begins by passing the heated gas over a water-filled heat exchanger. The resultant warm water is stored in a large 50m3 storage tank. "The Unico system offered the perfect way to utilise the waste heat from the quenching process, and was also flexible enough to accommodate a geothermal heat pump," says Pete Haynes, Maintenance Engineering Manager at SKF.



"We were impressed with the energy efficiency of geothermal heat pumps, and decided to add one of these between the hot water tank and the Unico heating module."

A Unico M series heating module contains a heating coil to which warm/hot water (or glycol) is supplied. The heating module can operate with input water temperatures of 49 to

## The Benefits

After the water from the tank is boosted in temperature by the geothermal heat pump the heat energy is exchanged to another water loop which is then circulated to the Unico heating module. Here the final heat exchange from the water to air is completed. A fan in the Unico blower module drives warm air at high velocity through the heat delivery network of metal plenums and insulated mini-ducts to multiple outlets at ceiling height. "The heating system serves a large 250m2 newly renovated metallurgy laboratory." He continues, "We operate the system continuously on a thermostat and the laboratory staff are impressed with the constant, draught-free environment achieved. And with such a large store of warm water we never run out of heat!"



## The Unico System®

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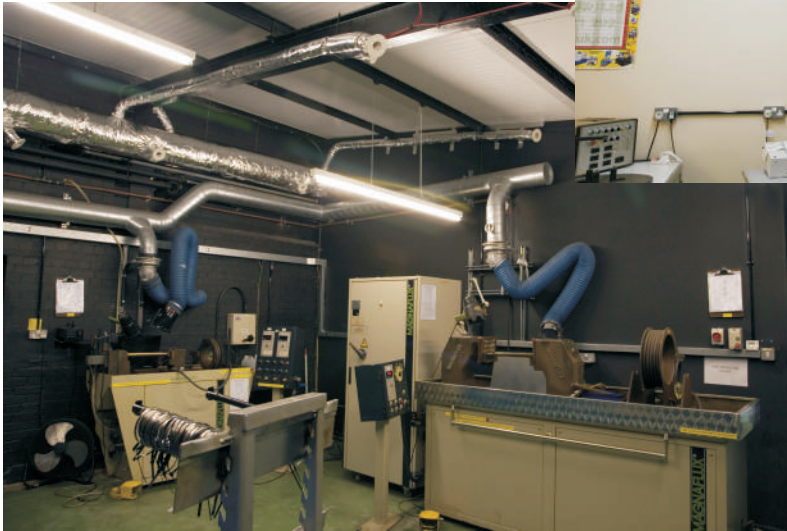
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**"We never run out of heat"**

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**CASE STUDY:**  
**APPLICATION:**  
**PROJECT LOCATION:**  
**INSTALLER:**  
**DISTRIBUTOR:**  
**EQUIPMENT OVERVIEW:**

TSKF  
Heating, Heat Recovery, Industrial  
Gloucestershire, England

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