

**Product:**  
AquaKat

**User:**  
Härterei Müller & Hayer  
GmbH & Co. KG

**Consultant:**  
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July 2009 to July 2010

## User application report

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### The company:

The Müller & Hayer hardening plant uses modern systems and cutting edge technology. The company can provide optimal heat treatment for specialised customer needs. In addition, highly qualified experts offer advice on material and heat treatment issues and the company has its own testing laboratory which operates in line with the latest quality management standards.



### Problem description:

The furnaces used for metal hardening have special cooling requirements due to the extreme temperatures involved in the processes. Since the water between the Swabian Alb and the Black Forest is very hard to extremely hard, problems are to be expected when using it as cooling water.

Every three or sometimes even every two months the machines' cooling pipes are so badly affected by limescale that they close up altogether and it is no longer possible to cool the furnaces.

With the extremely high temperatures involved, the system needs to cool down for two days before the pipes can be descaled with acid. This is an unacceptable situation.



## Proposed solution:

Müller & Hayer approached us with this problem. Our previous experience, which stems mostly from water vitalisation measures in private households, was not sufficient in this area to make any predictions and we decided to carry out a trial run.

In July of 2009 an AquaKat XXL was installed on the central cooling water manifold and one AquaKat XL each on the most affected furnaces.



## Result:

Since the AquaKats were fitted, it has not been necessary to descale the systems once!

It is also worth noting that the cooling pipe system was not descaled or cleaned immediately prior to the installation and that therefore we had no exact information about the condition (limescale deposits) of the pipes when we installed the AquaKats.

Currently all furnaces are operating at capacity and the cooling system is working perfectly!

The photographs on the following pages show the condition of the pipes.



Above: condition of the pipe after approximately 3 months of operation



Above: condition of the pipe after 3 months of operation with AquaKat! The cooling system has now run perfectly since July 2009 and has not needed to be descaled since.