

Reference project  
**Machine cooling**  
**Plastics processing**



Figure 1: tempering units

## Cleaning of 81 tempering units for injection molding units

### Assignment

- clean mobile tempering units (Figure 1)
- prepare components of injection molding machines for their relocation to a new manufacturing site

### Technical Data

- tempering units for precise control of the temperature in the tools of injection molding machines
  - heating power from 9 to 36 kW
  - connections feed / discharge G 1/4, G 3/8 or G 3/4
  - dimensions up to 0,7 m x 0,8 m x 0,3 m
  - permitted pressure of system 10 bar at 100 °C



Figure 2: mobile Complex® Unit MCE III

### Cleaning with the Complex® process

- mechanical cleaning with compressed air from mobile Complex® Unit MCE III (Figure 2 and Figure 3)
- access to the system via standard adapters (Figure 4)
- successive procedure:
  - mechanical Complex® cleaning
  - conditioning with citric acid solution
  - mechanical Complex® cleaning to remove remaining deposits and citric acid
- 1 technician, approx. 90 hours on site
- support by technical staff of the customer



Figure 3: tempering unit during Complex® cleaning with MCE III

### Result of Complex® cleaning

- deposits have been mobilized and removed from the tempering units (Figure 5)
- recovery of process safety and reliability
- improved hydraulic performance
- improved thermal performance, efficient operation



Figure 4: preparation of connections

### Customer's statement:

Burkhard Müller and Frank Öwermann, Alhorn GmbH & Co. KG in Lübbecke, Germany

*„We ordered Hammann GmbH for the cleaning of tempering units and machining centers during their relocation into a new production building. Cleaning with the Complex-process has been performed professionally and to our fullest satisfaction. Therefore, our machinery is fully operational in its new environment for our future demands.“*

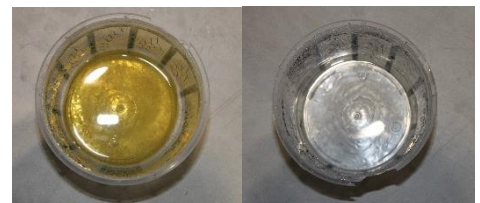


Figure 5: rinse water samples at the beginning (left) and at the end of cleaning (right)