

comprex® cleaning in the KraussMaffei technical  
centre  
Industry

## Reference project

KraussMaffei technical centre

## Task definition

- Cleaning the cooling circuits of older tools before implementation.
- Individual channel cleaning to document flow and deposits levels.

## System setup

- MCU-20 + decompression box:  
Here designed as a mobile unit with integrated water tank and feed pump. The screen deck is located in the return flow to accommodate filter fleeces (Fig.1)

## Technical data

- To clean: Large tool (Fig. 2)  
Small tool (Fig. 3)
- Type and quantity of deposits unknown
- Cleaning equipment:
  - MCU-20 (the optimised successor model is ToolClean, control panel including pressure and dosage unit)
  - Compressor box (successor model is the ConnectBox) for wastewater-saving cleaning with recirculation
  - Filter fleece: retains solids and prevents backflow of discharged particles into the system



Fig. 1:  
Set up of the MCU-20 + decompression box



Fig. 2:  
Connection of the MCU-20 to the large  
tool



Fig. 3:  
Cleaning the small tool

## Cleaning with the comprex® process

- To illustrate this process, the cooling channels were cleaned individually and the discharge was documented in each case with a new filter fleece. Fig. 4 shows the respective discharge in the filter fleece for 6 separate cooling circuits.



Fig. 4: Documentation of the particle discharge via filter fleece of 6 separate cooling circuits

## Result of comprex® cleaning

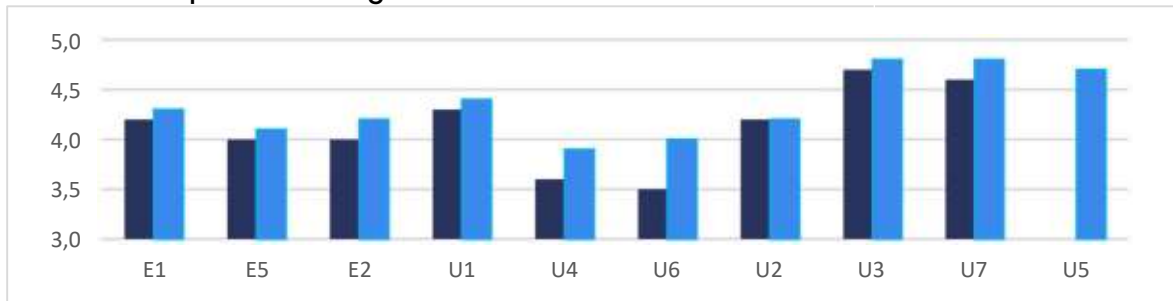


Fig. 5: Flow rates (l/min) of the individual mould channels before and after cleaning at an applied differential pressure of ( $dp=0.5\text{bar}$ )

## Benefits for the operator

- Energy saving, free pipes - less pump power needed
- Reduced water consumption, up to 70%
- Cleaning without additives, chemical water treatment
- Reduction of waste disposal costs
- Reduced plant downtime, approx. 10% compared to conventional cleaning methods
- Stability and reproducibility in the cooling processes
- Less scrap
- Successful solution to meet legal requirements, e.g. sustainability CO<sub>2</sub>, energy management EN 50001

## Summary

The cleaning of the two-piece injection mould has shown that the burdens of the individual cooling channels can vary greatly, as shown by the Deposits on the filter fleece and the measured pressure losses.

This has fatal consequences for the production plant. Coatings and deposits have an insulating effect and reduce the heat exchange, which leads to longer cooling times and thus cycle times in the plant. This inevitably reduces production output.

This also affects the quality of the manufactured products. Deviations in the heat exchange are immediately reflected in the form stability and the surface.