

cav 12/2007

SINGLE Temperature Control Technology

SINGLE Temperature Control Technology: Cleaning with Inox Cleaner ® restores the transmission rate of temperature control units / cleaning ,in situ'.



Denis Wieprich
Elmar GmbH

Hot and cold deposits of any kind (lime, ochre, bio films) reduce the heat exchange - in a boiler just as in process thermostats. A lime layer of 2 mm already reduces the transmission rate of a heat exchanger by approximately 20 %. Manufacturers of temperature control units, such as SINGLE, pay special attention to the design of their units to prevent deposits. Nevertheless every operator has to clean his temperature control unit sooner or later.



Michael Schieber
SINGLE Temperiertechnik GmbH
Customer Service and Business
Manager

"We recommend our customers the Inox Cleaner ® as an allround cleaner".

"What works with submerged pumps, should also be successful for the cleaning of metallic immersion heaters and heating containers of a temperature control unit", Denis Wieprich, branch manager of Elmar GmbH, explains his ideas about a more efficient cleaning procedure to SINGLE, a manufacturer of temperature control units. As authorized service partner for Grundfos pumps, Mr. Wieprich knows the company SINGLE very well, due to the fact that often Grundfos pumps are installed inside the temperature control units.

By cleaning submerged pumps made of stainless steel, Elmar has gained the best experiences with bypass cleaning and the special Inox Cleaner ®: pumps soiled with ochre and/or lime thus transport the cleaner in a closed circuit system. In general, the pump's hydraulics are cleaned after a short time and regain their original efficiency-level.

"There are similar conditions in a temperature control unit due to deposits: if the pump's hydraulic efficiency deteriorates, the thermal efficiency-level of the temperature control unit suffers", says Wieprich. The Institute for Energy and Environmental Technology IUTA e.V., Duisburg, confirms this estimate: Even a layer of 2 mm lime already reduces the transmission rate of the heat exchanger by approximately 20 % [1].

[1] Institute for Energy and Environmental Technology IUTA e. V.
http://www.iuta.de/thermodynamik/preistatlas_teil_vii.PDF

SINGLE: Specialist for temperature control technology

SINGLE has been developing, producing and selling high-performance temperature control systems for more than 40 years. The company's product portfolio consists of water-operated temperature control units, heat transfer units, air-cooled or water-cooled chillers, as well as customized solutions. SINGLE uses only high-quality components and materials. Long-standing customers testify to the ease-of-use and the reliable operation of SINGLE units even under high stress.



Customers at home and abroad send 600 to 700 units every year to SINGLE for repair and maintenance, but also for remodelling.

In addition to plastics processors and manufacturers of plastics processing machines, SINGLE caters to customers from the die-casting, chemical and pharmaceutical industry as well as to the metal plating and food production segment.

The company works with an international network of sales and service points. Services and after-sales support on all temperature-control related problems, training, commissioning and on-site training complete SINGLE's portfolio. SINGLE received an EN ISO 9001:2000-12 certificate and provides technology and manufacturer certification that meet the European Pressure Equipment Directive (PED).

The company with 100 staff has been a member of Looser Holding AG of Arbon/Switzerland since 2006.

The cycle of the circulating medium is quite simple: It first goes from a container to the temperature control unit, then to the "consumer" (the temperature of the medium being controlled, that means cooled or heated) and from there back into the container. Sounds trivial, but isn't.



Before these two heat exchangers were covered with a thick glycol-crustification, now they have been cleaned.

Deposits reduce the transmission rate

It is important that the production process is precisely controlled. The operators rely here on the transmission rate of the device agreed upon with the manufacturer. And this rate may suffer due to various deposits.

Michael Schieber, customer service and business manager at SINGLE, explains the background as follows: "If the circulating water is not pre-treated properly, you cannot avoid deposits of lime and ochre. Also glycol-containing media cause incrustations that lead to a rapid decrease of the transfer rate in the temperature control unit." Furthermore the pump's efficiency is lowered and in extreme cases the water pipeline may close. Also the filters clog and the valves don't work anymore. Due to contamination of the temperature sensors the operator might receive wrong temperature values: "To sum it up: the high performance of our units that our customers expect cannot be guaranteed any longer", so the conclusion of Mr. Schieber.

Until recently, SINGLE used a decalcifying powder for cleaning the units (this, in combination with a simple cleaning equipment, is also offered to the operators as an option). Mr. Schieber: "Up to now we have had to remove deposits manually in a however very time-consuming process - if removing was possible at all. Some construction units could only be replaced completely." So far the procedure consisted of: disassembling the device, cleaning every single affected part, opening the heat containers and out-steam them with a high pressure cleaner.



Cleaned heat-container filled with Inox Cleaner ®

With the special Inox Cleaner ® the procedure has become simpler and at the same time more efficient: Because the approved bypass-procedure for the cleaning of submerged pumps is already given in the construction of a temperature control unit: Instead of a circulating medium the installed pump forwards a diluted Inox Cleaner ® solution in a cycle-system (the solution could also be warmed up for an even better cleaning result!).

The most important features of Inox Cleaner ® at a glance:

- self-acting dissolution of ochre, lime, manganese, corrosion residues, scale and fats
- suitable for stainless steel (dilution ratio 1:5 up to 1:50, depending on the degree of contamination; weaker solutions can also be used on cast iron)
- contains corrosion and foam inhibitors
- the cleaner is biodegradable (acc. to OECD Directive 301-A)
- rated with water hazard class 1 (i.e. handling is no problem even in groundwater preserves)
- also suited for water meters and pipelines
- checked by TZW corresponding to guideline DVGW W319
- application in submerged-, spray- or cycle-systems.

By "in situ" cleaning without disassembling all parts of the unit affected by the circulating medium are reached - without preliminary purification a perfect result is possible, these are so far the experiences made by SINGLE. That is also valid for the installed pump, as Michael Schieber describes: „The pump is a central component of the temperature control unit - if its power is decreased by contamination, the entire process is affected. The clue is: if the pump forwards the Inox Cleaner ®, it thus cleans itself!" A nice side effect, whereas the manual cleaning of the pumps is very time-consuming and causes high costs.

Conclusion: After the good experiences that were made, SINGLE decided to include the Inox Cleaner® into their list of accessories, offering it in small bundles as a special filling starting from 15 l. Michael Schieber: "We recommend our customers the Inox Cleaner ® as an all round cleaning agent." Denis Wieprich of Elmar GmbH can be pleased with his successful advice to a customer - for the benefit of both companies.