



HOERBIGER Antriebstechnik GmbH chooses water recycling, saving on disposal costs.

Exceeding already high rinsing water quality requirements: HOERBIGER installs the new VACUDEST Clearcat

Requirements for components in the automotive industry are always increasing – which also increases demands on manufacturers and suppliers with regard to cleanliness. To improve in this aspect of production, HOERBIGER Antriebstechnik GmbH has invested in a modern VACUDEST vacuum distillation system with Clearcat technology to treat used rinsing water. It meets even the most stringent rinsing water quality requirements. The new system will replace the existing 19 year old, but still reliable, VACUDEST system.

HOERBIGER Antriebstechnik GmbH, situated in the Bavarian town Schongau, produces synchronisers for vehicle transmissions. The individual synchroniser components must be cleaned and rinsed so they are free of grease and oil residues before they go on to finishing. This currently generates 80 to 100 litres of degreasing rinsing water per hour, which requires disposal. In order to reduce disposal costs and conserve fresh water, an old VACUDEST model from 1997 was in use up to now to evaporate the used rinsing water. The treated water was then recycled back into the washing process.

New requirements

New demands on the rinsing water have now made it necessary to replace the current 19 year old system. The old VACUDEST already treats around 80 litres of water per hour. In order to meet new demands caused by growing orders and increasing quantities of water, the new system should offer a processing capacity of 100 to 120 litres per hour.

As of 2016, new requirements are also in place regarding the quality of the treated water. While previously a conductivity of 400 µS/cm was permissible



The 1997 VACUDEST model still worked reliably, but could no longer meet the elevated new requirements put in place by HOERBIGER.

in the distillate for recycling as washing water, HOERBIGER now requires conductivity under 200 µS/ cm. “We were extremely satisfied with the previous VACUDEST model and with the service from H2O. We hope to build on that relationship, and will also be configuring our new system in consultation with H2O”, said Manfred Knittel, Maintenance Team Leader at HOERBIGER Antriebstechnik GmbH.

Analysis in the application centre for wastewater-free production

To ensure that the new system would meet these heightened requirements, the application centre for wastewater-free production at H2O GmbH first carried out an analysis of the wastewater. In addition to determining the values to be reached, this also contained many more parameters, such as for example

Crystal clear distillate thanks to Clearcat

The innovative Clearcat technology, which is based on physical, catalytic processes, dramatically reduces the hydrocarbon index of the distillate. No consumables or chemicals are needed in the process, making the Clearcat technology extremely economical and low-maintenance. The distillate from conventional vacuum distillation systems requires expensive and maintenance-intensive treatment in activated carbon filters and membrane systems, or coalescence separators. The VACUDEST Clearcat system distillate, on the other hand, is crystal clear and virtually oil-free. Depending on requirements, it can be discharged immediately or recycled in the production process.

the evaporation rate and evaporation residues. The values finally convinced the customer: Thanks to application of the latest technology, distillate conductivity was under 100 µS/cm. Far better than the specified target value.

The new VACUDEST S 750 CC was fitted with the following modules for the HOERBIGER order:

- Clearcat: Reduces COD by up to 98% and guarantees a clear and oil-free distillate.
- Activepowerclean: The ceramic balls used in this module clean the heat exchanger during processing, prevent deposits and films from accumulating and guarantee high concentration with minimal cleaning effort.

	wastewater	distillate
pH-value (20 °C)	9,6	8,3
chemical oxygen demand (COD)	3.491 mg/l	132 mg/l
conductibility	463 µS/cm	99 µS/cm
concentration factor	1:100	
evaporation residue	0,2 %	

Excerpt from process water analysis: distillate conductivity reached 99 µS/cm, lying well under the 200 µS/cm requirement specified by HOERBIGER.

- Destcontrol: This module measures the pH value of the distillate and ensures consistently high quality for recycling.

Stable pH values thanks to Destcontrol

Conventional vacuum distillation systems adjust the pH value prior to evaporation. The disadvantage is that the evaporation process may trigger secondary reactions, which degrade the quality of the distillate. The Destcontrol pH regulator compensates for secondary reactions, thus achieving a consistently good distillate result.

H2O was able to meet all requirements in terms of technology, treatment and recycling of the distillate for parts washing. All noise control and system design requirements were also met and confirmed.

The compact VACUDEST system

H2O GmbH delivered the new VACUDEST S 750 CC around mid-November in 2015. Mr. Knittel remarked "It's nice and compact!" as HOERBIGER and H2O specialists carefully manoeuvred the system into position in the plant through extremely confined spaces at a height of 5 m.

The new VACUDEST has now been running reliably since mid-December, and offers outstanding distillate quality meeting all required values thanks to its various patented modules.



Complicated but ultimately successful forklift manoeuvring of the unit at a height of 5 m.

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