

Dear Business Partners and Friends,

Let us make it clear from the outset: this is not an end-of-year review! But to be honest, so much has happened here in the past few months that we now want to take this opportunity to fill you in a little on the here and now in our lives.



At the beginning of the year, we opened our new site in China. This was a tremendous and fascinating step for us, but also an intensive and complex one. The idea behind it was to be able to serve the highly interesting Chinese market locally with our first-rate German quality.

It was equally important to us to be able to be even closer to our system partners in the Asian area such as Citizen and Star and their internationally active customers. Because the significant added-value of our system partnerships is that we want to be able to support our partners, and above all their customers as well, on their core markets as best we can. We have also been able to initiate a number of new system partnerships in recent months, including Tornos in Switzerland, Tsugami in China and DMG Mori in Europe.

What we know for certain is that we are able to serve our customers like this today because of the many years that we spent approaching machine manufacturers intensively and on our own initiative. We also always proactively address the genuine requirements in the various operations. Amongst other things, this closeness to the market and to you has resulted, and continues to result, in new products or complementary solutions, such as our storage system for discharge of long parts as a fabulous addition to the combistream. We are also working closely on future and research projects, currently with the Fraunhofer Institute.

We are now facing a new milestone in the field of compact cooling high-pressure systems: the introduction of the new combiloop CL3 E. This will be a benchmark in its field, and is available as from November as the "Best of Class" in its segment.

We all know that the market environment is currently rather challenging. However, times of consolidation are also opportunities to think about future strategies – or outside the box. We shall continue to work consistently on our growth strategy, because at the heart of it are you and the continued efforts to increase your efficiency – as from November, with the CL3 E, amongst other items!

Enjoy yourselves, and we hope you have a healthy and successful second half of the year! Martin and Jürgen Müller

High pressure under a bar feeder – hype, the future ... or an alternative?

During a symposium, we discussed the subject of high-pressure efficiency with regard to solutions under the bar feeder.

Editor: Mr. Müller, you have developed a number of solutions for compact high-pressure systems to position under a bar feeder. Is that the future?

Martin Müller: Before I can answer that question, I have to tell you something. When we developed our first combistream system eight years ago, our combination of machine tank, chip conveyor, filtration and high- and low-pressure, the whole thing was preceded by the question: in the cramped conditions of a production hall, where is the best place to house the high pressure? Even then we considered using the space under the bar feeder for it. But our priority was on cutting-edge technology with the greatest possible process safety. And for this, the area at the front of the machine next to the chip conveyor offered and offers several options. Eight years ago, even bar feeder manufacturers were not really convinced that the space under their systems was very suitable.

Editor: So the solution of integrating the compact cooling system in the bar feeder isn't really ideal?

Martin Müller: Well – yes and no! There is a need, for instance, if a customer has to position various machines very close together, so in principle, the bar feeders can be positioned laterally and ending at the tool machine, or if he wants to do away with it altogether. But from a certain machine size and conveying capacities for low, medium and high-pressure and the possible integration of active cooling, a different approach is unavoidable. A large compact cooling system with a tank capacity of 300 l or more, for instance, could certainly be located partly under the feeder. But only partly. The space gain can be an advantage. However, the entire system could become inflexible, since the two systems restrict each other in terms of operation and access. Then it becomes less than ideal. In this case, we would advise against integration.



Editor: So you think it's more a passing trend than a firm future development?

Martin Müller: No. It's an alternative, but it has to be balanced against process safety and the desired increase in efficiency. Firmly integrated solutions always reach their limits, not least in the options for individualisation. After all, you're not going to get everything you need for a two-week camping holiday for a family of four in the boot of a coupé. It would be cramped and stressful and dangerous. This example is merely intended to illustrate that the first issue is always the feasibility of the given spatial conditions – questions such as: how much coolant can I get in the system tank, what are the levels of contamination and the kinds of chip, what filtration can I develop so that changing the filter is still easy, what high pressure do I need for my processes? And many more.

Editor: But what parameters need to be considered, and what problems could arise?

Martin Müller: Before you can answer these questions concerning the design of the compact cooling system tank, you need to know about the flow rate. The limits of physics play a part here. We estimate that the physical limit, and thus the balance limit, is reached at a maximum of 30 l/min. The cooling system always transmits heat into the machinery, which causes problems. If the high pressure overheats the system, the result is unwanted side effects

such as dimensional tolerances or foaming. At high pressures of up to 150 bar and high flow rates of between 20 and 30 l/min, it's hard to get a grip on the heat problem without a regulating pump. But a frequency converter and constant pump isn't really the solution. If you then add complicated chipping processes with a high level of fine chip formation, then the filtration soon reaches its limits. If you don't use an automatic filter, then the application has missed the actual issue.

Editor: So as you see it, the compact cooling high-pressure systems are firstly about achieving high process safety and optimised operating costs, and avoiding active cooling if possible – and all that in a very compact manner and possibly even placed under the bar feeder?

Martin Müller: Right! But basically, that's our standard philosophy: compactness, i.e., the optimum space utilisation, process safety and, if

possible, avoiding active cooling. This is why we developed the eco+ dynamic power concept. Of course, we also offer cooling if required – but also for compact systems.

Editor: After what you have said, I ask myself whether a solution under or in the bar feeder is even worthwhile, or whether it exceeds the limits of what is possible? But of course, you have some ...

Martin Müller: That's right – our e-models for confined installation situations. The aim of our development was not to build beyond the lateral limits of the bar feeder, yet still provide an attractive tank volume for cooling lubricants for smaller machines such as sliding headstock automatic lathes and a maximum flow rate of 30 l/min. We invested heavily in new filter technologies for our combiloop models CL1 E and CL2 E, apart from design housings, component arrangements and so on. We have been able to implement our new filter cartridge concept under the feeder, even in the twin coupling filter version. This is a milestone, and results in long service life of the filters. Thanks to the quick release and access from above, changing them is quick and easy. However, in our latest innovation, the combiloop CL3 E that is coming onto the market in the autumn, we have even managed to integrate eco+ regulating pump technology and the automatic filter. And optional active cooling. This is a milestone, and redefines the limits of what is possible and of the high-pressure unit – including for "under the bar feeder".

How it works?



CURIOS?

Find out more about the new combiloop CL3 E at: cl3e.muellerhydraulik.de/en/