

November 2020

CONTENTS

Page 1:

Virtual Communication

Page 1-3:

S.A. Christensen - Milk pump impeller

Page 3:

Problem Solver: AVK GUMMI - a versatile supplier

Page 4:

Next generation of elastomeric pumps for pain management

News

- **CBB 2020**



Virtual Communication

We closed our financial year 2019/2020 at the end of September. The result was not as expected in the autumn of 2019, but considering the major consequences of COVID-19 that we have seen all over the world – in particular within the brewery industry – AVK GUMMI has managed to maintain a reasonable level of activity.

The year started out well, but the expected growth failed to materialize as Corona kicked in in March. Consequently, we have experienced a state of zero growth in 2019/2020 compared with 2018/2019.

“Since the outbreak of the pandemic, we have focused on costs in order to ensure that we are geared towards the given turnover ratio,” says Peter Lorentzen, Managing Director, and continues: “Obviously, we cannot force our customers to purchase further existing products or initiate new projects – but we can make sure that our costs are adjusted to the current turnover.”

Needless to say, COVID-19 has made it difficult for us to visit our customers. Therefore, the majority of the customer meetings have been virtual meetings. Furthermore, we have had to implement restrictions concerning visitors at our premises. Even though this has been

a challenge, we choose to look at the positive side of things. We have never had so many video conferences with our customers, which means that the communication has actually increased. In particular, the larger projects have been prioritized so that our customers are well prepared for the future.

“For certain meetings, physical presence is required, and we look very much forward to visiting our customers again – and to invite our customers to visit us again,” says Anders G. Christensen, Sales and R&D Director.

“Throughout the entire Corona crisis, focus has been on securing the necessary raw materials at the right price,” says Peter Lorentzen and continues: “The raw material market has been under pressure, and the price index has not followed the expected pattern, which means that not all of our suppliers have given us the expected price reduction. The competition is tough, and we continuously strive to secure the best raw material prices.”

What can we expect from 2020/2021? We believe that we will experience growth during the next twelve months; however, it all depends on the COVID-19 development. “It is difficult to predict the future, and the Corona situation has definitely not made it any easier,” concludes Peter Lorentzen.

S.A. Christensen - Milk pump impeller

AVK GUMMI and S.A. Christensen & Co. (SAC) are in the final phase of a project with the purpose of

improving the functionality and quality of a SAC milk pump impeller for a milking parlour.

The cooperation started in 2016 where SAC was facing a number of issues with the quality of an impeller already introduced in the market. The dairy farmers complained of problems, among others concerning dimensional stability, pump output and lifetime of the impeller, and SAC concluded that this was largely due to the quality of the rubber. Furthermore, it turned out that the dairy farmers worked the impeller harder than expected, which resulted in an increased dynamic load. Finally, the dairy farmers used stronger chemicals than initially planned. All in all, this resulted in wing fractures/ruptures and crack formations of the impeller when used in the milking parlours.

"SAC has a clear success criterion stating that the impeller must be fully functional for a minimum of 12 months so that it is not necessary to change the impeller in between the 12 month service checks. We could not fulfill this criterion," says Niels Kirkeby-Thomsen, Mechanical Engineer R&D at SAC, and adds: "This type of impeller must deliver 3-4,000 litres per hour, which was also not realised."

Therefore, SAC decided to find a new rubber supplier who could deliver a material that would fulfill all the requirements. SAC knew that AVK GUMMI offers a wide range of rubber qualities with the required approvals and has an in-house development department and a fully automatic mixing plant. Therefore, SAC presented the impeller to AVK GUMMI during a project meeting in 2016.

FACTS:

A/S S.A.Christensen & CO. was founded in 1938, and today the company is one of the larger companies in Europe specialising in the production of milking parlours and milking equipment. The company is a 100% Danish, family-owned, limited company and is presently owned and led by the third generation. The SAC family is founded in the Danish agricultural business with a strong focus on high quality, animal welfare and environmental sustainability. The company has a professional network with approximately 100 dealers in more than 65 countries.



"It is important to SAC that all parties have an understanding of the end user so that the dairy farmers experience a value in the change of supplier. AVK GUMMI is a knowledge-driven company with focus on fact and evidence – which goes hand in hand with our values," says Niels Kirkeby-Thomsen.

Comprehensive testing

Since his employment at SAC in March 2017, Niels Kirkeby-Thomsen has worked with the development of milking parlours, milk pumps and vacuum pumps and therefore became involved with the impeller project after the project had been initiated.

"Never before have I seen such a structured project documentation," says Niels Kirkeby-Thomsen and continues: "Sometimes it can be very difficult to take over a project from another project manager, but in this case, we had detailed meeting and visit reports from AVK GUMMI, which was a big help."

"The initial task was to find the correct combination of geometry and rubber properties, which would give us a sound basis for developing a

rubber quality that would fulfill all the requirements," says Anders G. Christensen, Sales and R&D Director at AVK GUMMI, and adds: "During this process, we examined the dimensions of the impeller as well as the deviations in order to define the most critical parameters affecting the pump pressure."

On this basis, a food compliant rubber quality was developed, and we were ready to initiate the first tests. The development department at AVK GUMMI carried out functional tests, and SAC tested the impeller in cooperation with the Danish Technological Institute.

The Danish Technological Institute then compared and validated the test results. Finally, long-term tests were carried out in a milking parlour at a dairy production.

"Maybe it wasn't necessary to involve the Danish Technological Institute since AVK GUMMI has in-house testing equipment, but it is always nice to have a third party validation," says Niels Kirkeby-Thomsen.

Trust and responsibility

"At SAC, we know a lot about milking cows, but we are not necessarily experts in all the parts in our equipment, including the rubber," says Niels Kirkeby-Thomsen and continues: "Therefore, it was important for us to find a rubber supplier that could supplement us here, and we believe that we have found the right match with AVK GUMMI."

We had far too many complaints with our previous supplier due to the rubber quality. Therefore, our first priority was to reduce the number of complaints. Furthermore, it was important for us to have the right documentation to show our customers that the rubber material fulfills the requirement specification – and we achieved this with AVK GUMMI.

The fact that the significant reduction of complaints means that in only six months, we will have obtained a return on investment, including our investment in the tools, is just a bonus. All in all, we have found a solution that works and generates value for the dairy farmers as they are now guaranteed operational reliability and maximum uptime."

The future

When asked about the future, Niels Kirkeby-Thomsen says: "We have reached our goal, and we now have an impeller that lives up to all the requirements concerning quality and functionality. Therefore, as soon as

this type of impeller has been fully implemented and approved by our customers, we will be ready for the next project – an even larger type of impeller for "8,000 litres".

"At AVK GUMMI, we are ready for

new challenges – also concerning existing products – and we are really happy with our cooperation with SAC," says Anders G. Christensen and concludes: "We share the same values and agree that focus must always be with the end user."

Problem Solver: AVK GUMMI - a versatile supplier

Being a sub-supplier to a versatile industry for more than 45 years – serving in food processing, water handling, healthcare and many technical and chemical industries – AVK GUMMI has to be adaptable to many different needs. Not only from a rubber formulation perspective, but also in terms of process technologies and manufacturing capabilities.

As SEEPEX GmbH saw the need for improving the quality of sleeves for the range of larger progressive cavity pumps, they turned to AVK GUMMI.

"AVK GUMMI is a reliable supplier and had already showed profound knowledge in elastomer technology during several other product launches. Therefore, it was obvious to ask AVK GUMMI to accept the challenge," says Marcel Bruchmüller, Material Group Manager, SEEPEX.

Years ago, AVK GUMMI took over the production of the range of smaller sleeves in the full compound programme. AVK GUMMI was able to demonstrate a short payback time on the mould investment, which was interesting for SEEPEX. At the time, it was not possible to calculate an acceptable payback time for the range of larger sleeves due to the relatively low volume.

A new improvement project was initiated at SEEPEX where the scope was to improve surface finish and the overall quality of the range of larger sleeves. AVK GUMMI suggested to take over and modify the existing tools, going from compression to injection moulding. This would enable improved flow pattern, better vacuum control and much higher curing pressure – the latter is important to ensure optimum crosslink density and dimensional stability.

The product range includes HNBR, NBR and FKM. While HNBR and NBR are fairly forgiving materials to inject, large volume FKM can be somewhat of a challenge. To enable this, AVK GUMMI has developed a new injection technology and recently combined it with dosaging units for our range of large injection moulding machines, going from 400 – 1200 tonnes in clamping force.

With the capability of injecting up to 5 litres of FKM, this is state of the art technology, which enables us to produce large high precision FKM parts with no surface defects.

After approval of all HNBR and NBR parts, the first initial samples in FKM have been manufactured, ready for testing at SEEPEX.

"To place confidence in AVK GUMMI paid off. We are very pleased about the good results and the smooth

transition," says Marcel Bruchmüller.

Modification of tools in use makes speed of conversion a decisive factor to avoid running out of stock. Prioritizing the sequence, a firm time line for executing samples and testing has also contributed to a seamless transition.

With quality and timing in place, the only thing left to make such a transition project a success is the economy. Modification of tools can very often be as expensive as building completely new tools, but we managed to keep the cost of modifications at 1/3 of new tooling costs, and at the same time we even managed to improve tool stiffness, enabling better flash and tolerance performance.

"A true success story which shows some of our competences after 45 years in the rubber industry," says Anders G. Christensen.



Next generation of Elastomeric Pumps for post operational pain management



Ofer Shay
Managing Director, Medical Flow Systems Ltd.

Medical Flow Systems Ltd. (MFS) is an innovative high-tech company providing post operation acute pain therapy by means of medical devices, such as the ACTION™ Fuser Pain Pump and ACTION™ Block Pain Pump.

The principle is to fill a balloon with anesthetic medication, regulate the flow while continuously infusing it to the surgical wound site or proximity to the regional nerve plexus controlling the surgical site. The balloon – or more accurately an elastomeric tube – is encapsulated – both towards the anesthetic and outside to the surroundings by means of different polymeric materials.

The scope is to anesthetize the surgical area only and to enable all other body systems to function as normal through continuous regional anesthesia administration. This will minimize the use of opioids, secure faster recovery and significantly shorten the hospitalization time.

As MFS together with Ambu A/S were looking to improve the elastomeric tube, and AVK GUMMI is always scouting for demanding applications within the field of medical devices,

the basis was made for an interesting cooperation. With similar applications in our portfolio, AVK GUMMI took a head start on material formulation and manufacturing processes.

A key performance criterion is for the elastomer tube to provide the right static pressure throughout the entire duration of therapy and to be able to provide this repeatedly during the lifetime of the device. Knowing that rubber behaves differently at different temperatures, and the fact that the device is used in different climate zones makes such a performance a challenge. Also, requirements to purity and uniformity are essential for compliance and performance.

Although the device is simple in use, it combines a lot of different materials and technologies. The elastomer tube is essential to performance, but so are the outer and inner liners, the regulator and other components.

“With AVK GUMMI, we have found a professional highly experienced partner that we have been very pleased with during the cooperation with MFS. The cooperation between the parties led to a merger between a deep understanding of the needs at the engineering level and professionalism and in-depth knowledge in the field of rubber that resulted in an improved solution,” says Ofer Shay, Managing Director, Medical Flow Systems Ltd.

“We are looking very much forward to the launch of the next generation of ACTION™ Block Pain Pump and ACTION™ Fuser Pain Pump and to the next project together with Medical Flow Systems Ltd.,” says Sales- and R&D director Anders G. Christensen.



ACTION™ Block Pain Pump and ACTION™ Fuser Pain Pump.

NEWS

CBB 2020



AVK Sealing Technology exhibited at the China Brew China Beverage (CBB) 2020 in Shanghai during the period 13 -16 October 2020.

Since its establishment in 1995, CBB has been one of the most important and influential events for liquid food machinery in the Asian-Pacific brew and beverage industry.

Even though COVID-19 has made it difficult for everyone to travel and has delayed or cancelled many events all over the world, around 900 expert exhibitors and more than 60,000 visitors attended the CBB 2020.

“Generally in my opinion, CBB 2020 still had a positive significance this year,” says Terry Wu, Managing Director at AVK Sealing Technology, and continues: “Many domestic enterprises and foreign companies in China actively participated in the exhibition, and we have received some very interesting leads that we look forward to working with.”

NEWSLETTER

Published by:

AVK GUMMI A/S

Mosegaardsvej 1
DK-8670 Laasby
Tel.: + 45 86 95 13 11
Fax: + 45 86 95 10 85

avk@avkgummi.dk
www.avkgummi.com

Sales:	Anders G. Christensen
Technical service:	Erik Cornelius
Logistics:	Sune Krøis
Quality:	Kent A. Rasmussen
Editor:	Anne-Kristina Lowes