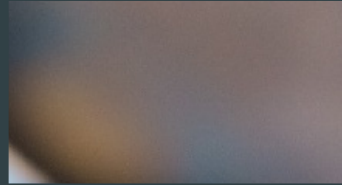


Brüel
SYSTEMS



WASHING, DRYING & HANDLING SOLUTIONS

FOR A SUSTAINABLE WORLD

BRÜEL SYSTEMS A/S

Brüel Systems A/S develops, manufactures and services systems for automatic cleaning and handling of recyclable packaging containers for Pool & Logistics, Bakery, Meat, Dairy, Fish and related industries.

We focus on innovative solutions that are resource efficient, effective and operationally reliable.

We are committed to providing optimum solutions meeting our customers needs for efficient washing, drying, and handling of reusable and recyclable packaging. In cooperation with our customer we fully define the requirements for the equipment and the operating regime including, where appropriate, the interface with existing equipment and building requirements.

FOR OUR CUSTOMERS' SUSTAINABILITY



Brüel Systems has full capability to provide customers with turnkey solutions. This means our customers do not need to contact a number of suppliers when a new plant is to be designed. Contacting Brüel Systems is sufficient. In cooperation with our customer, we define fully the requirements for the equipment and the operating regime including, where appropriate, the interface with existing equipment and building requirements.

Once the scope is defined, our team will prepare a detailed technical and financial project proposal which will be discussed and agreed with the customer in all aspects before the work is started. Our experienced project and production engineers transfer the project from design to reality. All equipment is assembled and tested in our factory for initial customer acceptance prior to delivery.

In addition, we prepare thorough documentation for the equipment, including comprehensive operating manuals. A range of after-sales service packages are also available to suit customer requirements. These are just some of the reasons we consider ourselves to be a leading turnkey supplier.

We constantly seek for the best solutions and processes and commit ourselves to values of responsibility, reliability, sustainability and high quality.

- We recognise our customers' need for sustainable solutions
- We offer proven technology and quality - more than 2000 systems installed worldwide
- We offer efficient, durable and cost-effective solutions
- We support our customers 24/7 with worldwide service



STANDARD MODULES



CUSTOMIZATION



SERVICE



SPARE PARTS

THROUGHOUT OUR **HISTORY**,
WE HAVE BEEN DETERMINED
TO DELIVER **HIGH-QUALITY SOLUTIONS**



A STORY THAT GOES
178 YEARS BACK IN TIME

- 2021 ● Market leading and high-end technology provider to a market in growth.
- 2000 ● Exporting to +60 Countries and well-known in the business.
- 1983 ● From local supplier to global turnkey supplier of washing and handling systems.
- 1976 ● Delivery of first crate washing machine and conveyor systems.
- 1843 ● Founded as a blacksmith company.



Recycling = estimated a huge (trillion) global business by 2025



178 years in business



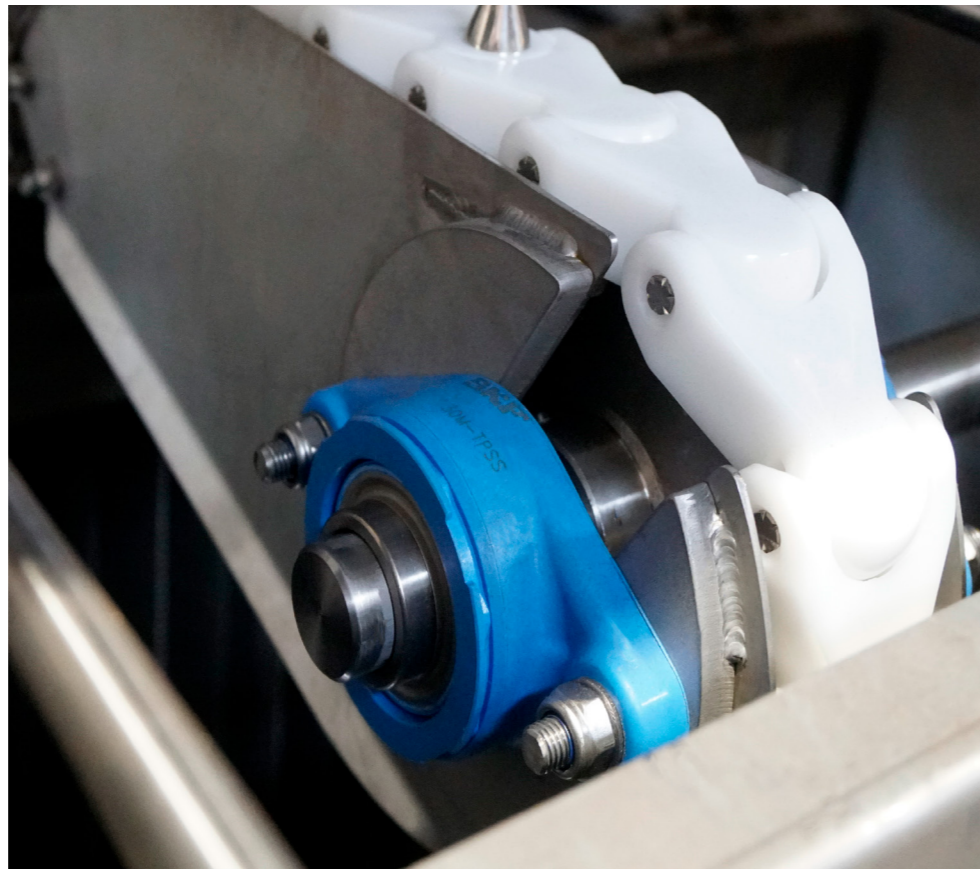
+85 employees



Customers in +60 countries



Sales to +200 customers



Today we can offer high-performance solutions for any container washing and handling in the industry. At Brüel Systems, we focus on projects with a high technical content and we can support our customers from A-Z.

Our organisation is geared to handle projects of the most complex nature and size. Our clients cover all sectors of the food industry, and we have customers in pool and logistics, bakery, meat, fish, dairy, beverages, retail and confectionary. Beyond these we also serve pharma, automotive and other industries. Our list of references encompasses all solutions - from stand-alone washing units to turnkey solutions.

Sustainability to our customers include access to qualified competencies, high quality products and constant readiness in response to service needs.



INNOVATIONS
SOLUTION
RELIABILITY

Brüel

24/7 SERVICE
GOALS SUCCESS
RESPONSIBILITY ●●●●●●●●

CUSTOMER
TEAMWORK
AMBITIONOUSNESS
EMPLOYEES
PARTNERSHIPS
PROCESSES
PEOPLE

SUPPORTING CUSTOMERS WORLDWIDE

Our customers are worldwide represented and belong to different industries. Since the 1970's, we have provided more than 2000 systems. Our intensified know-how enable us to offer our customers the most profitable solutions balanced in a mix of standard-modules and customized solutions.



FOR A SUSTAINABLE WORLD



IT WAS CLEAR TO US FROM THE BEGINNING...

...that Brüel Systems should be our partner. We participated in the whole process in close cooperation with the technical sales department at Brüel Systems.

After the installation, a top service has followed, and we are never in doubt about who to contact for spare parts or when we need after sales service. All in all a very good cooperation at all levels.

SØREN JENSEN,
HEAD OF THE TECHNICAL DEPARTMENT, LANTMÄNNEN UNIBAKE

POOL & LOGISTICS

Handling of various crate types and sizes is a must to ensure the best possible logistics for the fresh food industry. Brüel Systems' washing, drying and handling machines are provided with full electronic control and user friendly operating systems.

• FISH

Prevention of food poisoning and elimination of spoilage are best accomplished through optimum hygiene. Brüel Systems' solutions have pre-wash, dissolving, wash and after-rinse units as well as automated feeding to the washing unit – all contributing to a lean and clean operation.

FOOD AND BEVERAGES

• BAKERY

Efficiency in an automated bakery can be optimized through a lean washing system delivered by Brüel Systems. Besides having a low energy consumption, the system assists in maintaining a clean working environment for the benefit of the staff.

• DAIRY

Optimal food safety and hygienic handling are at the centre when developing any Brüel System solution for the dairy industry. Examples of elements that ensure optimum hygiene are the tank and filter systems in the pre-wash, dissolving and washing sections and pumps.

• MEAT

High food safety and a hygienic production and working environment are of absolute necessity in a modern slaughterhouse. A self-cleaning filter, pre- and after-rinse are just a couple of the methods applied to remove all traces of proteins and coatings when crates are washed in a Brüel Systems washing system.

PHARMA

Brüel Systems comply with the high standards of hygiene and demands for systems with maximum performance levels for washing and use of materials.

OTHER INDUSTRIES

Brüel Systems has delivered more than 2000 systems to customers in different industries. We have developed technologies, standard modules, complex systems and an extensive know-how that can be adapted to new customers with unique needs.



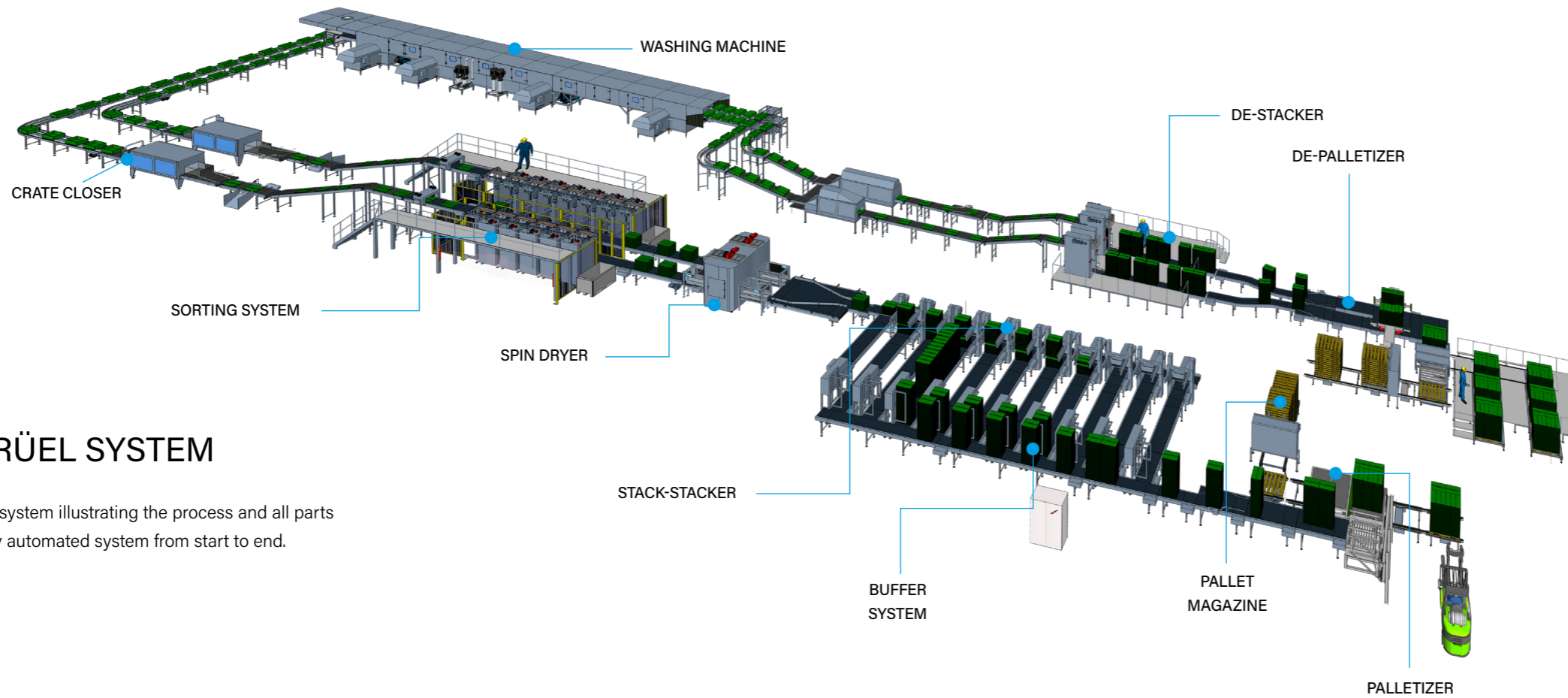
WORKING WITH BRÜEL SYSTEMS

We consider our employees to be one of our most important assets and we believe that a work environment built upon principles of sustainability should be the cornerstone of Brüel Systems. Everyone at Brüel Systems is expected to be committed and given the opportunity to have influence. By respecting and valuing our employees and recognizing the individual, our customers will experience a great willingness to constantly taking responsibility.

We have a strong and competitive value set - always with the customer in the center. We believe that we must move in the same direction, so we take responsibility for the joint effort. In our efforts to deliver outstanding customer value, we show expertise, professionalism and focus on the dialogue with our customers. This is the key to our success and the strong corporate culture we have built.



Since the 1970's, Brüel Systems has developed & delivered more than 2000 systems.



A BRÜEL SYSTEM

A Brüel system illustrating the process and all parts of a fully automated system from start to end.



BASICALLY, WE WERE LOOKING FOR SUSTAINABLE SOLUTIONS

The choice for sustainable providers and environmentally friendly systems are crucial to us given our business. The fact that we have had a fully functional washing line system from Brüel for the past 30 years for the handling of our trays indicates the system's sustainability. Equally important to us of course is the degree of operational sustainability; its capacity; can we rely on the system to function 24/7; does it promise low energy consumption; does it give the option for re-use of water and last but not least does it offer ergonomic healthy work processes for our employees? Basically, we are looking for sustainable solutions and we found the necessary criteria existing with Brüel Systems as a trusted partner.

TORD BARONE, SITE MANAGER SÖDRA



BUSINESS PROCESS

BRÜEL PROJECTS – A TO Z

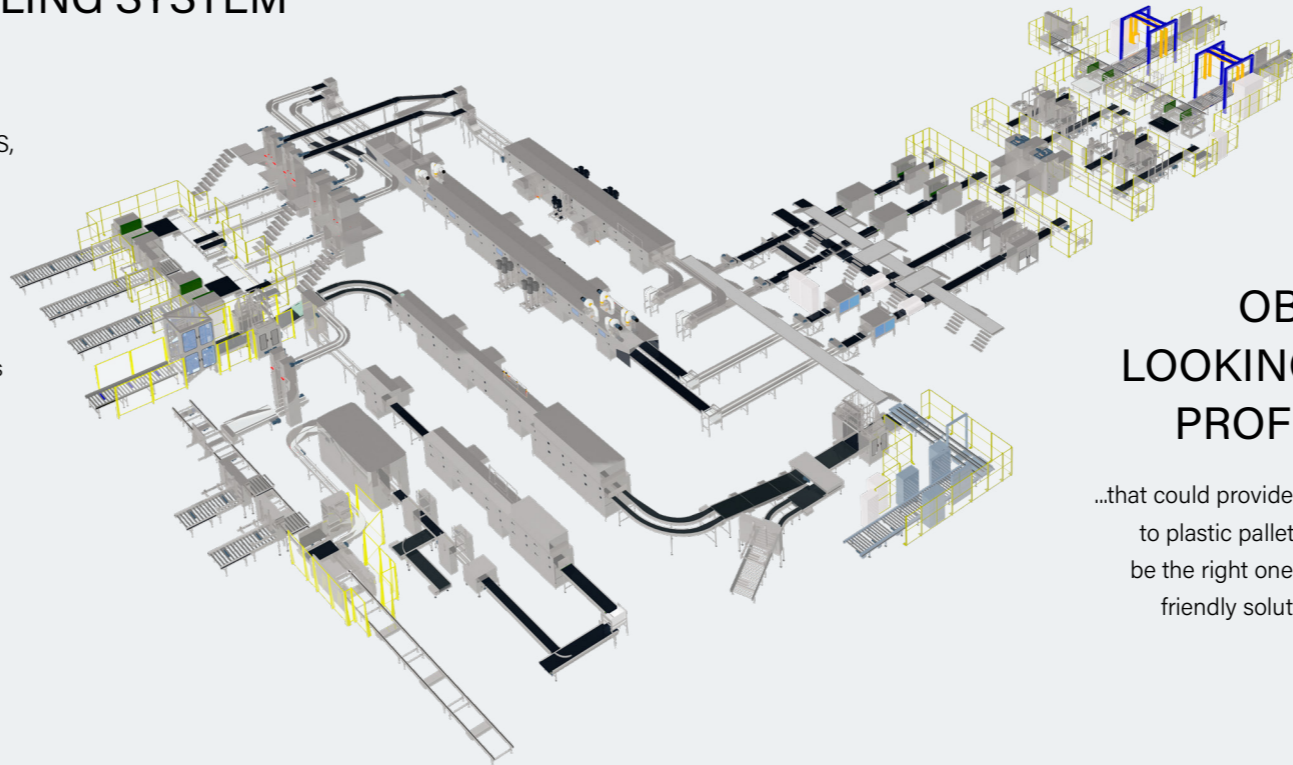


Our customers have a varied set of needs and preferences. We continue to serve customers with stand-alone products, but most often engage in turn-key solutions based on our extensive know-how. A typical process can take up to 3 years, and involves different phases where we advise, deliver and support our customers from A-Z.

NORSK LASTBÆRERPOOL A/S, 2017 FULLY AUTOMATED WASHING- AND HANDLING SYSTEM

By 2030, Norway has committed to reduce the country's CO2 emissions with 40%. Counting for more than 40% of Norwegian trade/transportation, the retail business plays a dominant role in helping secure this goal. Our customer, Norsk Lastbærerpool AS, provides the retail business with recyclable containers and has worked hard in recent years to make the market adapt to more sustainable solutions, including among other things use of plastic instead of wooden pallets. NLP plastic pallets last up to 10 years and even then, the material is re-used. Compared to wooden pallets, they are believed also to be more stable which reduces food waste and optimize transportation. Also, Norsk Lastbærerpool has recently added IoT to their solutions providing customers with optimum information to handle transportation at very best conditions.

We are proud to have supplied Norsk Lastbærerpool with current fully automated washing- and handling system for their site in Langhus, thus supporting them in their mission helped by sustainable processes. Our solutions secure minimal use of water, energy and chemicals and demonstrate records of decade life-time lastings.



**OBVIOUSLY, WE WERE
LOOKING FOR AN EXPERIENCED
PROFESSIONAL PARTNER...**

...that could provide the sparring that we needed when we moved from wooden to plastic pallets to ensure that the investment we were to make would be the right one. In our vision, we stress that we provide environmentally friendly solutions and that is a vision we share with Brüel Systems.

RAGNAR STRAND, CEO OF NLP

SÖDRA, 2019 SINGLE LANE WASHING MACHINE

The tray washing system supplied for Södra in 2019 is a single lane washing machine with a capacity of appr. 1,500 trays per hour. The system is a repetitive order to the system which Brüel Systems already delivered to Södra 30 years ago. A new feature in the system delivered to Södra is the re-use of water, which was important to Södra.



POLYMER LOGISTICS, 2013 SEMI-AUTOMATED SYSTEM

This system was the first system designed to Polymer Logistics. It was delivered to their site in Riverside, California, US. Since 2013, Brüel Systems has provided several other systems to Polymer Logistics sites worldwide.





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WE ARE HAPPY TO HAVE CHOSEN BRÜEL SYSTEMS AS A COLLABORATIVE PARTNER

Svenska Retursystem distributes more than 150 million reusable crates and 8 million reusable pallets every year to the Swedish Food Industry. Reducing climate footprint is one of our most important tasks. In 2018, we reduced the climate footprint for a return box from 72 to 61 grams of CO₂ emissions. This is due to a prolonged life of the return boxes and an increased share of renewable energy in the manufacture of the boxes. This saves 1500 tonnes of CO₂ for the industry in one year.

In 2014, Brüel Systems supplied a fully automated handling- & washing system for our 15,000 m² site in Helsingborg. The system increased our capacity by 50%.

We constantly work to simplify and improve sustainability throughout the supply chain of FMCGs and we are happy to have chosen Brüel Systems as a collaborative partner.

JOHAN LAGERGREN,
OPERATION MANAGER, SVENSKA RETURSYSTEM

OUR PRINCIPLES FOR WASHING



MECHANICS

Our washing systems are equipped with high efficient mechanics

- Pumps generating the exactly needed pressure in the washing system
- Self-cleaning filter systems that prevent the nozzles from clogging
- Individually designed nozzle positions for better cleaning
- High-efficient label removal



TIME

In our washing systems, dirt is soaked/ dissolved for 20-120 seconds in heated detergent water, prior to the washing stage.

- Optimised use of energy
- Better efficiency of detergent
- Optimum washing result



TEMPERATURE

Depending on the type of dirt, our washing systems are capable of operating efficiently at washing temperatures between 45-85°C and even down to low temperatures as 35°C with great washing results.

The advantages of lower washing temperature:

- No egg white or protein "burned" onto the surface (up to 50°C)
- Minimal heat consumption
- Less evaporation and heat loss to surroundings
- Optimised use of energy
- High efficiency of detergent
- Still optimum washing and label removal results



DETERGENT

We advise you to use the right kind, amount and type of detergent. This has great influence on the final washing and label removal result.



OUR PRINCIPLES FOR HANDLING

We offer complete integrated handling and storage solutions for all types of containers (e.g. rigid, foldable, bale-arm) and pallets, capable of operating at very high capacities and including full electronic control and Management Information Systems (MIS).

- Container storage / buffer systems
- Sorting systems
- Stackers / de-stackers
- Box turning and emptying devices
- Palletisers / de-palletisers / pallet magazines
- Foldable box openers / closers
- Bale-arm openers
- Conveyor systems

TURBOMATIC DRYING

Brüel washing systems incorporate a Turbomatic drying technology for our blow drying systems. Advantages are

- Highly efficient drying of boxes
- No heating required
- Leaves boxes without spots and lime stains
- Reduced steam extraction
- Up to 80% saving on cost per box compared with conventional blow drying systems

SPIN DRYING

Brüel washing systems can also be delivered with our unique spin drying (centrifugal) technology. Advantages are

- Up to 90% less energy usage
- Excellent drying results
- Low noise level
- Highest hygiene standards
- Less space requirements

OVERALL EQUIPMENT EFFICIENCY (OEE)

Brüel Systems offer the possibility of immediate insight into your production,

- which show real-time production data
- which can spot inefficiencies instantly
- which visualize production and performance data in a dashboard
- which will help to increased production performance





WE WERE IMPRESSED BY THE EXPERTISE WE FOUND AT BRÜEL...

...not least with the mechanical plant. This was of great importance to us as we were aiming to build the new distribution centre with the highest possible degree of automation. Following an in-depth evaluation, we chose the supplier who was best fitted to minimise our total washing costs over the total lifetime of the plant.

We also placed great emphasis on the Brüel technical superiority in front line areas of water filtration systems, low washing temperatures, high productivity and extremely good washing performance.

DISTRIBUTION OPERATOR TO TESCO, UK DR PHIL SHEPHERD,
TECHNICAL SERVICES DIRECTOR AT CHRISTIAN SALVESEN. (TODAY XPO LOGISTICS)





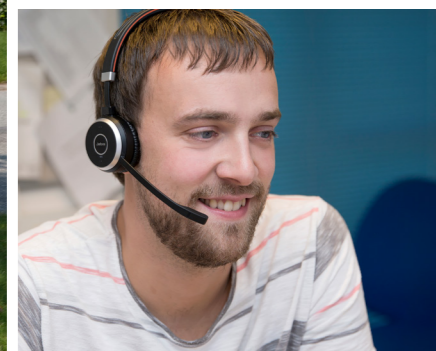
BRÜEL SYSTEMS AFTER-SALES SERVICE

Our concept of service is built upon the premise that we support our customers 24/7. We recognize that any interference on a customer's site in production lines is a major cost and that it therefore requires urgent access to our assistance and action.

For that reason, we offer around the clock online service which means that our service department is prepared to assist urgently by phone. Also, we have global service hubs where our service staff can reach any site urgently.

We offer original spare parts for any Brüel Systems equipment - no matter the age! Spare parts are shipped everyday worldwide in order to support our customers operations.

For customers who demand extra service guarantees, we offer premium service agreements, involving for us to monitor, adjust and maintain the customer's system in very proactive manners over the years after delivery.



www.bruelsystems.com



Brüel SYSTEMS

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