

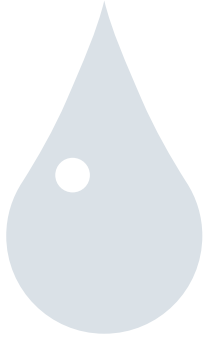
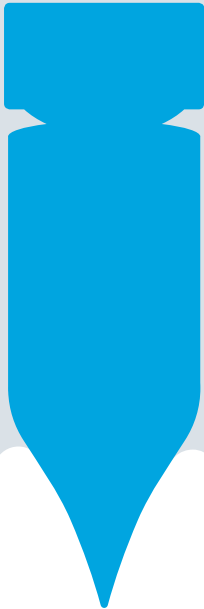
FILLING YOUR NEEDS



BLOW-FILL-SEAL SOLUTIONS



bottelpack®



TO CUT A LONG PROCESS SHORT

IT'S BEEN OVER 60 YEARS SINCE WE FIRST CAME UP WITH THE PERFECT ALTERNATIVE TO CONVENTIONAL LIQUID FILLING PROCESSES FOR OUR CUSTOMERS – PARTICULARLY THOSE IN THE PHARMACEUTICAL SECTOR. OUR AIM? TO MAKE SURE THAT EVERY LAST PRECIOUS DROP IS PACKAGED MORE RELIABLY, MORE FLEXIBLE, AND IN A MORE USER-FRIENDLY WAY. IT IS BASED ON THIS PRINCIPLE THAT BLOW-FILL-SEAL TECHNOLOGY CAME TO LIFE: THE WORLD'S FIRST ASEPTIC FILLING PROCESS OF ITS KIND FOR LIQUIDS, SEMISOLIDS, AND EVEN SOME HIGHLY SENSITIVE PRODUCTS.

Customers from all over the world now place their trust in the german engineering and swiss precision that make each and every aseptic bottelpack system so special. With more than 50 billion packaging units per year, our invention is instrumental in protecting something of real value: ideas that help people down to the very last drop. We are Rommelag – the inventors of BFS technology.

YOUR BFS ONE-STOP-PARTNER

From your initial idea for a new product right through to launching it on the market, we'll be on hand to support you with our business expertise and in-depth technical knowledge. So whether it's planning your bottlpack system, connecting the interfaces properly, testing the equipment, or getting everything installed, our support ensures that everything runs smoothly and according to plan – just the way you want it. It also helps that we work in close partnership with our customers to develop individual packaging designs, test new materials and material compositions, and offer filling tests.

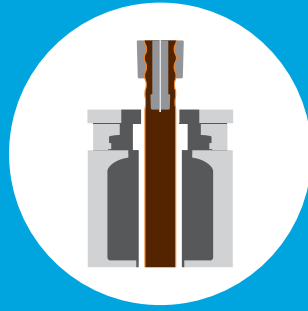
Even once your system is up and running, we'll still be happy to help at any time with compact employee training courses a first-class spare parts supply, and an open ear for our customers whenever they need to get in touch. You could call it a comprehensive service. We like to think of it as a trusting partnership.

THE BLOW-FILL-SEAL PROCESS

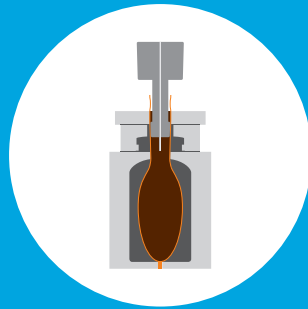
Every BFS process begins with the extrusion of a sterile polymer parison directly within the system. Once complete, the container can then be moulded, filled, sealed, and immediately demoulded – all in a single process, in a self-contained system, and without the need for any external intervention. This eliminates the need for expensive logistics, not to mention time-consuming cleaning and sterilization processes for prefabricated containers.

All of the filling processes – including the dosing system – are designed with CIP/SIP in mind. What this means is that all of the product-handling lines are cleaned, sterilized with pressurized steam, and dried with sterile-filtered air by automatic programs. This makes bottlpack technology one of the most reliable aseptic filling methods.

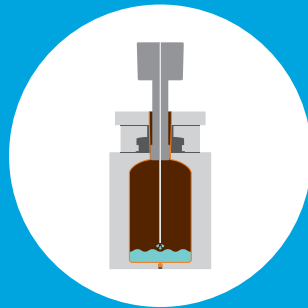
The experts at Rommelag ENGINEERING make sure that the end product from your bottlpack system is always exactly what you wanted and just what your customers need.



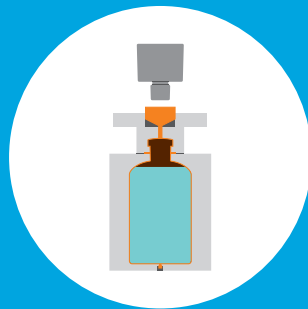
EXTRUDING – The polymer parison is extruded from granulate and positioned inside the open mould.



BLOWING – The mould closes and, in doing so, welds the base. The mandrel is positioned on the neck of the container and blows sterile air into the parison to create the desired shape. Small containers are created using a vacuum.



FILLING – The exact amount of filling as measured by the dosing system is fed into the container via the mandrel.



SEALING – Once the mandrel is removed, the head mould comes together to form the desired closure type.



DEMOULDING – Opening the mould releases the container from the system and the next cycle begins.

ASEPTIC PACKAGING MADE SIMPLE

For anyone interested in reliable aseptic packaging solutions for bringing liquids and semisolids to market without having to invest in additional space, complex logistics, and added storage costs for empty containers, Rommelag's Blow-Fill-Seal technology and bottlpack systems are the obvious choice.

The pharmaceutical industry is undeniably one of the main sectors to rely on the BFS process. And in addition to pharmaceuticals, the chemical industry is one of a number of other sectors in which liquid and semisolid materials are increasingly finding their way into BFS packaging. To name just a few examples: cleaning agents, maintenance products, and even functional food.

The processes of blowing, filling, and sealing the plastic containers all take place in a single operation. What's more, the entire BFS process takes place within the system under aseptic conditions, which means maximum protection for the filling without the need for any human intervention.

The various advantages of this contamination-free filling technique using breakproof plastic containers include application-specific packaging in virtually any conceivable design, low production costs, and high output rates – not to mention the minimal spatial requirements of the bottlpack systems.

Our bottlpack systems are the perfect choice for your application

- ▷ Bottles, ampoules, dropper bottles, bellows, etc.
- ▷ Polyethylene, polypropylene, or featured plastic containers
- ▷ Output quantities of over 33,000 items/hour
- ▷ Filling levels from 0.04 ml up to 2,000 ml
- ▷ For pharmaceuticals, chemical products, cosmeceuticals and nutraceuticals
- ▷ Ancillary punch and block separation systems as well as welding machines and inspection systems also available



The Blow-Fill-seal process is an excellent choice in many fields when flexible, rapid, and cost-effective manufacturing solutions are required:

- ▷ Pharmaceutical industry (injection solutions, ophthalmic products, etc.)
- ▷ Veterinary medicine (medication, etc.)
- ▷ Nutraceutical industry
- ▷ Cosmetics industry (creams, gels, lotions, etc.)
- ▷ Chemical industry (cleaning products, lubricating oils, antifreeze, etc.)
- ▷ Agriculture and automotive industry (oil, grease, lubricant, pheromones, etc.)

FILLING YOUR NEEDS



BOTTLES OR AMPOULES

Whether a bottle or an ampoule is to be filled, how it is filled, and what additional functions the container needs are usually based on the intended use. Rommelag's bottelpack systems can manufacture bottles, ampoules, dropper bottles, bellows, etc. in a variety of forms and plastic blends, with filling volumes ranging from 0.04 ml up to 2,000 ml, aseptically or conventionally – fully automated and without human intervention in all cases.

NORMAL OR COOL-BFS

coolBFS



Our standard procedure is to fill products at room temperature. Particularly in the pharmaceutical industry, however, there is an increasing requirement to handle products that are highly sensitive to temperature. This is exactly why Rommelag has developed the cool-BFS process, incorporating special measures that keep the filling at the correct temperature before, during and after the filling process. As a result, the filled product is maximally protected from heat impact while the process speed remains high. BFS at its best.

SEALING OR DOSING



Eye drops, inhalation products, injectables, products for rectal or vaginal application, ointments, creams, or gels: to accommodate all of the different products and applications on the market, all BFS containers are produced ready to use and in line with requirements. What's more, they can be tailored to become functional parts in medical devices.



SINGLE DOSE OR MULTIDOSE

No matter whether your product is intended for single or multiple use, our systems are the ideal choice for moulding virtually every type of container complete with the precise level of filling and the appropriate seals to go with them.

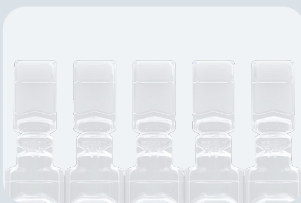


LUER OR STANDARD

When syringes are used, the bottelpack ampoule design guarantees straightforward and reliable Luer fit connections. The liquid can be drawn up into the syringe simply, safely, and without the need for an additional needle. With the vented Luer connection, the pressure is equalized automatically, which is a pretty neat solution and just one of countless ways in which BFS technology offers genuine ingenuity.

TWIST OR PUNCTURE OR TWIST AND PUNCTURE

When it comes to deciding on the right closure for you, it essentially comes down to how the product will be used and whether it's for single or repeated use. But the one thing they all have in common is the fact that every container is hermetically sealed to create a fully functional closure for a clean, convenient, and practical result.



*The **twist-off cap** is a closure design that has proven its worth millions of times and is used in a large number of applications.*



*The **KME closure** is complemented by a screw cap with a mandrel. Screwing the mandrel in creates an opening through which the product can be dripped or squeezed out.*



*With the **eurohead closure**, the hermetically sealed container is combined with the eurohead cap. It was specifically designed to meet the requirements of infusion bottles (IV bottles).*



*With the **nipplehead closure** the container is hermetically sealed.*

ADVANTAGES OF BFS

OUR EXPERIENCE HAS SHOWN THAT THE ASEPTIC FILLING TECHNIQUE USED IN THE BFS PROCESS IS A MORE FLEXIBLE AND COST-EFFECTIVE ALTERNATIVE TO CONVENTIONAL FILLING METHODS IN VIRTUALLY ALL CASES.

Proven quality

Whether you're interested in bespoke containers, a bottletack system itself, or the BFS process, at Rommelag we don't put our name to anything until it's been checked down to the last detail to ensure it's in perfect condition.

Minimal spatial requirements

From bottles to ampoules: the chosen vessel is produced directly in the system, where it is then aseptically filled and reliably sealed before finally being dispensed as a completed container. As a result, there's no need to waste valuable space on stockpiling, cleaning, and disinfecting containers.

Perfect coordination

Our specialists design and set up every bottletack system with maximum precision to ensure seamless production processes: from the ideal choice of components right through to the integration of the bottletack system into your production line and beyond.

Exact dosing

Thanks to the exact individual dosing in each cavity, it is always possible to add just the right amount of fluid or semisolid to each container as specified.

Sustainability

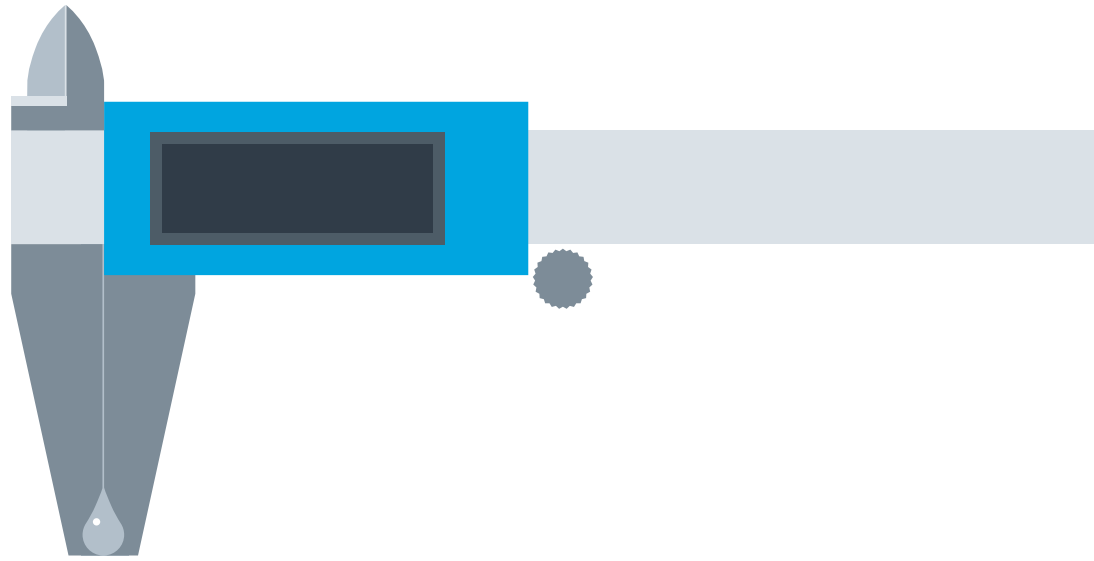
With each new bottletack generation, we take big steps towards more sustainable production. Our latest machines generate 80% less production waste, consume 75% less energy, and save 420,000 liters of water annually.

Exceptional vertical integration

Virtually every component in our bottletack systems is manufactured by us. And by that, we're talking about a whole lot of equipment. But we do this because it's the only way to be sure that you can always count on every one of our parts and components to function flawlessly. The extreme durability of our systems is the perfect testament to this philosophy on quality. We also offer professional maintenance and a prompt spare parts service to support you every step of the way. With Rommelag ENGINEERING, there's no more dealing with third parties: it's simply you and us, saving valuable time, money, and unnecessary stress.

Certified processes

Rommelag bottletack systems are compliant with the strict requirements of the pharmaceutical industry, meaning our production processes are respected around the world.



Wherever you see the bottelpack label, you know you can count on uncompromising quality from the inventors of Blow-Fill-Seal technology. Thanks to our German engineering and Swiss precision, we can always be sure that our systems will give you exactly what you're looking for – from the smallest ampoule to the largest container. That's a promise.

The advantages of BFS technology

- ✔ Break-proof plastic containers
- ✔ The ideal choice for aseptic filling of solutions, suspensions, emulsions and gels
- ✔ Maximum safety thanks to ISO class 5 conditions at the filling point
- ✔ The inventor of – and global market leader in – BFS technology
- ✔ Recognized advanced aseptic system by regulators
- ✔ Fully automated manufacturing, filling and sealing processes in a single operation
- ✔ Exceptional process and product reliability
- ✔ Maximum filling accuracy
- ✔ A broad portfolio of proven standard container designs and a virtually unlimited range of customized container designs
- ✔ Possibility for individual adaptation to the specific application and administration type
- ✔ Modular machine design for easy installation in classified and non-classified areas
- ✔ Significantly smaller spatial requirements than conventional filling systems
- ✔ Automatic cleaning and sterilization processes as required

OUR PRODUCT PORTFOLIO



AMPOULES

CLOSED PARISON

ROTARY MACHINES

| 530 | 550 | 460-15 | 460-18 | 460-20 |
|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| | | | | |
| 1 MOULD | 1 MOULD | 15 MOULDS | 18 MOULDS | 20 MOULDS |
| LDPE+PP | LDPE | LDPE+PP | LDPE+PP | LDPE+PP |
| up to 12,960 items/h | up to 21,600 items/h | up to 31,000 items/h | up to 33,000 items/h | up to 37,500 items/h |
| 0.1 - 20 ml | 0.1 - 20 ml | 0.2 - 10 ml | 0.2 - 10 ml | 0.2 - 5 ml |
| Ophthalmic Inhalation Injection | Ophthalmic Inhalation Injection | Ophthalmic Inhalation Injection | Ophthalmic Inhalation Injection | Ophthalmic Inhalation Injection |
| length up to 130 mm | length up to 130 mm | length up to 92 mm | length up to 80 mm | length up to 68 mm |



INSPECTION

Vacuum chamber

912



Ampoules/bottles

0.2 - 1000 ml
manual feeding



spotter^{II} BFSa



Ampoules inspection

0.1 - 20 ml
Up to 68.000 amp./h
Standalone after autoclave
100% Cosmetic Inspection
100% Particle Inspection
Monitor filling accuracy



spotter^{II} BFSB



Bottles inspection

100 - 1000 ml
Up to 28.000 bott./h
Standalone after autoclave
100% Cosmetic Inspection
100% Particle Inspection
100% Leak testing (squeeze)
Monitor filling accuracy


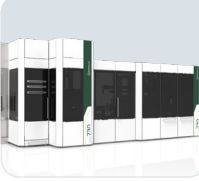

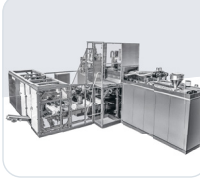




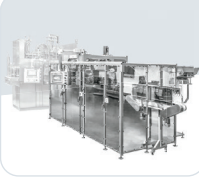
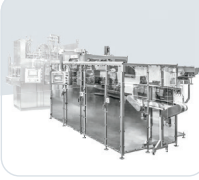
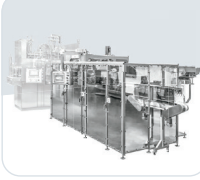
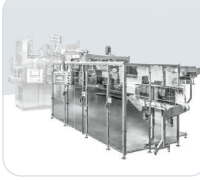
BOTTLES

OPEN PARISON

SHUTTLE MACHINES

| 321 | 730 | 360 | 364 |
|---|---|---|--|
|  |  |  |  |
| 1 MOULD | 1 MOULD | 2 MOULDS | 4 MOULDS |
| LDPE+PP | LDPE+PP | LDPE+PP | LDPE+PP |
| up to 2,500 items/h | up to 3,200 items/h | up to 5,000 items/h | up to 9,200 items/h |
| 100 - 1000 ml | 100 - 1000 ml | 100 - 1000 ml | 100 - 1000 ml |
| LVP Irrigation Infusion | LVP Irrigation Infusion | LVP Irrigation Infusion | LVP Irrigation Infusion |
| bottles up to 303 mm | bottles up to 303 mm | bottles up to 303 mm | bottles up to 303 mm |

CAP WELDING MACHINES

| 950 | 954 | 955 | 965 |
|---|---|---|--|
|  |  |  |  |
| Semi-automatic (stand alone) | Fully-automatic (one line) | Fully-automatic (one line) | Fully-automatic (double line) |
| suitable for model 321 | suitable for model 321 | suitable for model 360 | suitable for model 364 |
| up to 2,000 items/h | up to 3,000 items/h | up to 6,000 items/h | up to 9,000 items/h |
| Eurocap 30/26/22 (any) suppliers | Eurocap 30/26/22 (any) suppliers | Eurocap 30/26/22 (any) suppliers | Eurocap 30/26/22 (any) suppliers |



LET'S CONNECT!

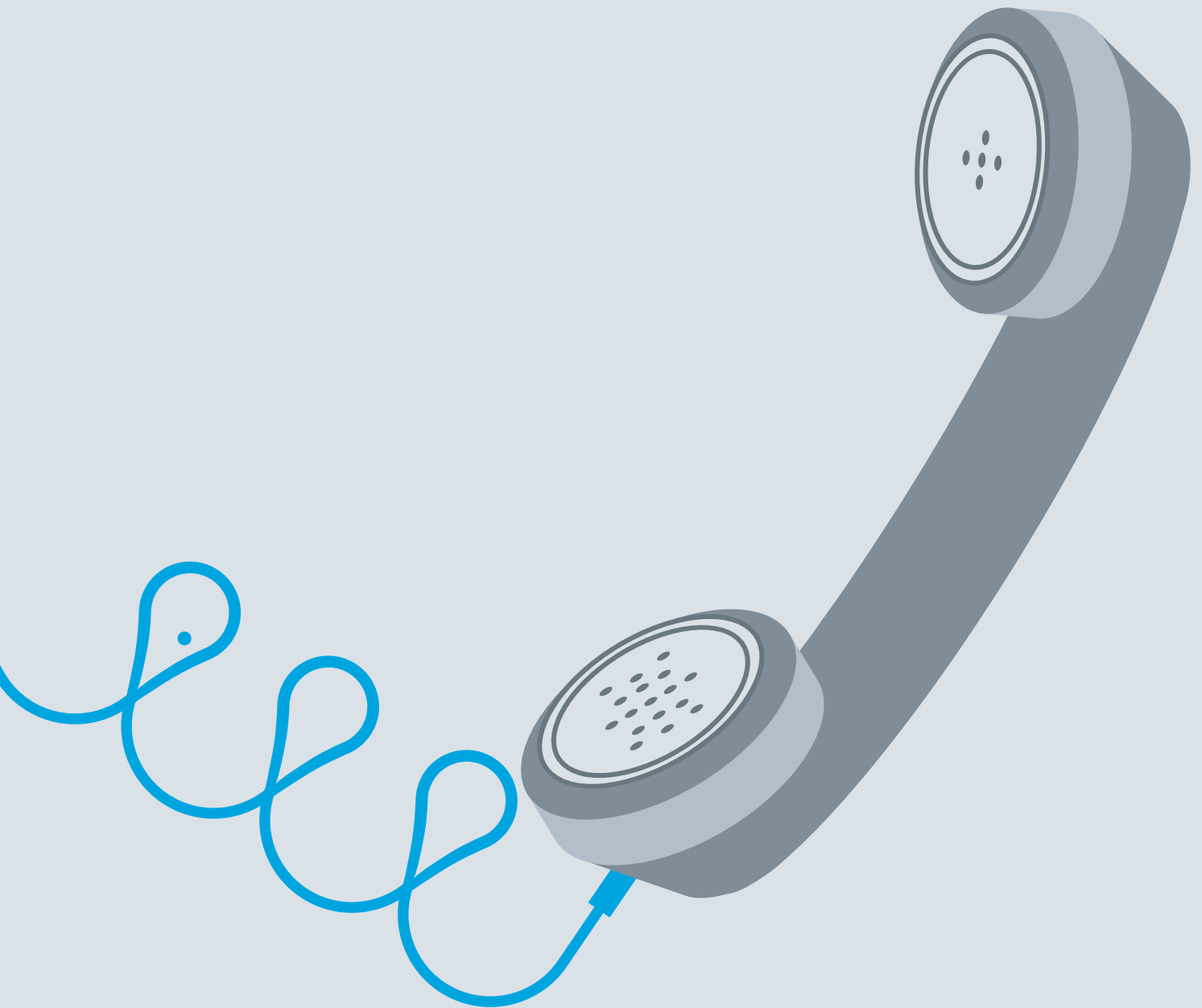
THIS BROCHURE IS DESIGNED TO GIVE YOU A TASTE OF WHAT ROMMELAG ENGINEERING AND BFS TECHNOLOGY CAN DO FOR YOU, AS WELL AS AN INSIGHT INTO THE KEY BENEFITS AND POSSIBILITIES OF PACKAGING MANUFACTURED USING THE BLOW-FILL-SEAL PROCESS. AS FAR AS BROCHURES GO, THIS IS AS MUCH AS WE CAN EXPECT TO ACHIEVE.

We are firm believers that nothing beats personal contact. Contact us via www.rommelag.com.

We're always by your side

The Rommelag Group sees itself as a one-stop partner for Blow-Fill-Seal technology and a specialist for flexible containment solutions. With our complete solutions for Fill&Finish, we are a strong partner for the pharmaceutical, food, cosmetics and chemical industries. Under the umbrella brand Rommelag, we bundle the products and services of our Engineering, Digital, CMO, Flex and Service divisions. Rommelag has 12 locations in Germany, Switzerland, the USA, China and India. We employ around 2,000 people worldwide.

www.rommelag.com



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