Innovative packaging with bottelpack®

Blowing, Filling, Sealing – and much more!

bottelpack® packaging systems are used worldwide for many decades for the aseptic packaging of liquids in plastic containers. Blowing the containers, filling and sealing in one operation cycle results in maximum product safety, user-friendly packaging design, low production cost and high output.

We are well qualified to assist you, from the selection of the appropriate packaging to the development of the most cost effective production line.
With bottelpack® in one operating cycle: Blowing, filling and sealing – and much more!

Transparent, flexible containers made of Polyethylene (PE) or Polypropylene (PP) for sterile, particle- and pyrogen-free pharmaceuticals

Unit dose and multi dose in multiblock and single containers: Easy to box, easy to mark securely, easy to use

Ready-to-use containers with formed pipettes, droppers, withdrawing systems or re-closures

bottelpack® Packaging System, Cap Welding Unit and Leak Detector

For decades, bottelpack® is the proven, versatile and cost effective packaging system for liquid and viscous products.

In over 70 countries, well known companies trust their daily packaging tasks to the bottelpack® system.

Continuous innovation, highest production standards, as well as worldwide customer service, guarantee years of successful operation at the highest degree of quality.

Whether canisters, plastic bottles, tubes, vials, droppers, bellow design or portion packagings – whether pharmaceuticals, still drinks or household cleaners – whether Polyethylene or Polypropylene – whether 100 pieces/h or 30,000 pieces/h – all requirements can be fulfilled with bottelpack®. Hourly, daily, by the millions, worldwide.

Blow moulding, filling, and sealing in one automated machine. Space required is only a fraction as compared to what other methods entail. The storage of empty containers is eliminated and the work force is reduced.

The international standards for aseptic packaging are met for the pharmaceutical as well as the food industry.

rommelag® does not limit itself to the sale of state-of-the-art packaging systems but also offers its partners package design development, stability trials, as well as test production.

Extruding.
The plastic parison, extruded from polymer, is accepted by the opened blow mould and cut below the die of the parison head.

Moulding.
The main mould closes and simultaneously seals the bottom. The special mandrel unit settles onto the neck area and forms the parison into a container, using compressed air. Small containers are formed by vacuum.

Filling.
By way of the special mandrel unit, the product, precisely measured by the dosing unit, is filled into the container.

Sealing.
After the special mandrel unit retracts, the head mould closes and forms the required seal by vacuum.

Mould opening.
With the opening of the blow mould, the container exits from the machine and the cycle repeats itself. Transfer for further processing is achieved by means of conveying systems.
Before the filled container is sealed, it is possible to automatically insert parts. This could be a dropper or a rubber stopper, a cannula or any other special part.

The pictures illustrate the insertion of a part by a vacuum gripper. Afterwards the head mould closes and seals the inserts while simultaneously forming the hermetic seal.

**Examples of safety seals**

Each container is hermetically sealed, whereby functional seals are formed.

- **The Twist-off Closure** is utilized by the millions as a very economical closure which can be used with many products.
- **The Cutting Ring Closure** is one where a ring inside the cap cuts a large opening into the top of the container.
- **The KME-Closure** is augmented by a screw cap with a pin. Turning down the cap with the pin results in an opening for drops or spray.
- **The Euro-Closure** combines the hermetically sealed container with a Euro-cap and is specially designed for the requirements of Infusion bottles (I.V. bottles).
The extruded plastic, rendered sterile by this process, in conjunction with the immediate container production, provides the basis of the bottelpack® aseptic-system with its blow-fill-seal (BFS) technology.

The indispensable cleaning and sterilization processes, essential with prefabricated containers are thereby eliminated. In addition, the risk of particle contamination is considerably reduced when comparing prefabricated with empty bottles. The safety of aseptic production is thus increased considerably.

The complete filling path, including the dosing system, is designed for CIP/SIP*. All product lines are cleaned, rinsed with distilled water, sterilized with saturated steam and dried with sterile air, by means of automatic operating programs.

Compared to glass, containers made of Polyethylene or Polypropylene have substantial advantages. Extreme flexibility when choosing a design should be mentioned, as well as immense weight advantages, extensive shatter resistance, particle-free production and neutrality to the fill product.

The almost unlimited design of flexible containers with the bottelpack® process, leads to entirely new user-friendly packages which could never be achieved with rigid containers.

*Cleaning-in-place
Steaming-in-place

The picture on the left shows an aseptic-system with easily accessible air and product filters.
These are ready-to-use, sterile inhalation containers with sterile air ventilation/perfusion system in the bottom, ascending tube, thread for adapter, formed nozzle and twist-off.

I.V. bottles are equipped with the required closures and formed, foldable hangers.

The Euro-cap has been developed as a universal closure for bottelpack® containers and is ideally suited for introducing medications.

Irrigation bottles with unique closure: Upon turning down the specially designed cap, the seal at the fracture line breaks, resulting in a large opening for pouring, with the possibility of re-closure.

I.V.s in collapsible PE-bags can also be administered without a vent filter. The needle remains in a small rest volume which prevents air from entering.
The aseptic filling with the Blow-Fill-Seal technology in one operational cycle leads to the highest sterility assurance level at remarkably low production costs.

The standard time-/pressure dosing system can be adjusted by 1/1000 second steps for each individual filling needle. The system is without moving parts and consequently, works without wear.

The aseptic bottelpack® system is ideally suited for the packing of pharmaceutical products:

• The modular concept allows the separation into dark/white side areas.
• The pack manufacturing takes place in an extremely small area.
• An integrated clean room in class A quality (US-class 100) offers the highest possible safety in sterility.

• The operator does not need to interfere in the aseptic area during production.
• The equipment is compliant with GMP/PICS/FDA requirements as well as other authorities guidelines.

Beside operating and maintenance manuals, standard protocols for IQ/OQ/PQ for FAT/SAT procedures can be made available.

The picture shows a bottelpack® installation type 4010M with the white side installation area.
Sterile solutions for injectables are packed free of pyrogens and particles in bottelpack® systems. The autoclaving of Polypropylene (PP) ampoules can take place at 121°C.

The withdrawal of the product into the syringe with the use of a Luer-connection simplifies the preparation for injection. The use of only one needle is a major advantage of this design.

For the double administration of eye drops, nose drops and ear drops, unit dose ampoules with an integrated metering chamber have been developed. There is no need for preservatives.

Fixed engraving and transparent plastic labels allow a good visual fill control. Product information such as lot number, expiry date and product name can be embossed indelibly. Colour coding helps to differentiate injectables.

Ampoules can be presented as unit doses and multi doses. They are safe for administration and are used for a broad spectrum of products, such as injectables, inhalation therapy, droppers, irrigation and other.

Syringes with a Luer lock are connected directly to the ampoule after the ampoule tab has been twisted off. It is possible to use the syringe without needle to withdraw the product. Oral products are designed for easy to squeeze use.

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The bottelpack® packaging systems are equipped with the most modern, easy-to-operate, freely programmable controls. The software is prepared individually for the specific characteristics of the product and machine design. When several formats are involved, we include the appropriate programs which make expensive input processes unnecessary. Operator instructions and a trouble shooting program are standard and the display offers various languages.

The cleaning and sterilization processes required with aseptic machines are conducted automatically with the help of suitable CIP/SIP programs.

Relevant data from the machine preparation stage and production are automatically recorded and can be printed out. Interfaces for recording operational data are also possible.

The operating panel with colour screen indicates the set of parameters both alpha-numerically and graphically. There are password levels for individual access. The information is stored in various languages. Process data are recorded on a hard disc.
Variations for drop application:
A puncture cone forms the drop orifice or a calibrated drop chamber can be formed. On request, conventional dropper inserts can also be moulded in. For the use of re-closure caps, threads are moulded on to the neck of the bottle.

The user opens the warranty seal by turning down the cap with the cone pin (KME-closure). For the cleaning and rinsing of contact lenses, sterile unit doses with twist-off tabs are available.

*Picture left*
Block of ampoules produced by a bottelpack® system and alternately filled with different cosmetics.

*Picture right*
In case of orally administered ampoules, the shape is chosen so that the container can be squeezed easily. The mouthpiece is formed below the twist-off tab.

A great variety of small containers specially designed for the administration of medicines can be produced by the bottelpack® process.

Liquids and viscous contents can be squeezed out very easily from a bellows design. The formed cannula is designed to meet the needs of the specific application. For rectal or vaginal use, a cannula, an interlocking device for a catheter or threads to accept an applicator are moulded on.
Whether aseptic, acid-/lye or explosion proof –

WORLDWIDE SPECIFIC APPLICATION

Our portfolio includes thousands of container designs in various shapes, sizes and applications. Square designs can increase the number of containers in a cardboard box by up to 20%. Mould inserts for different volumes reduce cost and change over time. Aseptically filled soft-drinks do not contain any preservatives. The freedom of choice in designs may attract the interest of specific consumer groups.

Worldwide, bottelpack® systems produce large numbers of containers for special applications for daily use. For example (see picture): pheromone hanger-pack for vines; ready for use bottles with integrated dosing chamber for a cleaning concentrate; cooling elements for ice boxes; single dose containers for technical products. Even combustible mixtures with ignition points above 250°C are packaged on explosion-proof bottelpack® lines.
rommelag® is the inventor and world-wide leading supplier of the blow-fill-seal machines known by the name of bottelpack® for the packaging of liquids, creams and ointments.

Our main products are bottelpack® machines, developed and built to customer specification, for single containers and ampoules in various designs and outputs, either as fixed-cycle machines or rotary type high capacity machines.

The modular-designed machines allow optimum adjustment to extensive product applications in broad capacity ranges.

Our product range includes extensive auxiliary equipment, also for downstream, particularly cap welding machines and leak detectors for containers and ampoules.

Apart from the obligatory operation and maintenance manuals we can also provide our customers with additional qualification documents for the validation.

Competent rommelag® personnel will be pleased to assist you.

Packaging System with one blow mould
The blow mould is set up for a volume ranging from 0.1 ml to 10 litres, depending on the machine. A single mould can have up to 40 cavities.

The output is determined by the volume, the plastic, and the number of possible mould cavities and ranges from 150 – 12,000 units/h.

Packaging system with two blow moulds
The blow moulds are set up for volumes ranging from 0.1 ml to 2 litres, depending on the machine. A single mould can have up to 40 cavities.

The output is determined by the volume, the plastic and the number of possible mould cavities and ranges from 700 – 24,000 units/h.

Packaging system with continuously revolving mould chains
These high-output systems operate with 15 sets of moulds, each mould can have up to 30 cavities. This results in an endless row of formed containers with volumes from 0.1 ml to 50 ml.

The output is determined by the volume, the plastic, and the number of possible mould cavities per mould and ranges from 4,000 – 30,000 units/h.

Semi-automatic and fully-automatic Cap Welding Machines
Depending on the type of cap welding machine, the transfer of the containers with Eurohead and Eurocaps for the welding process is carried out semi, or fully-automatically.

The capacity depends on the plastic and the welding cavities and ranges from 1,100 – 4,000 containers/h.

Leak Detector for integrity testing
The rommelag® HVLD high voltage leak detector operates based on the high voltage test method and the electrical conductivity of the fill product packaged in a non-conductive plastic ampoule. The system is designed for fully-automatic in-line leak testing.

The capacity depends on the shape and type of the containers as well as the conductivity of the product and ranges up to 5,000 containers or ampoule blocks/h.
Final assembly and preparation for the FAT at the factory of a bottelpack® system 4010M with external punching unit and Leak Detector.
The design of the bottelpack® packing systems is based on a modular concept which is adapted to the customer and country specific requirements. A team of experienced design engineers is working on the development and construction with the latest CAD-systems. The construction data is directly transferred to CNC-controlled machine tools. The high precision is the basis for the extraordinary quality and product life of all bottelpack® machines.

A special R&D department offers a number of machines and moulds for all kind of customer specific trials. Our contract packing sites allow the production of stability samples.

As part of our customer service we offer extensive training sessions during acceptance runs. Our service personnel trains the operators and instructs maintenance departments at customer’s site.