



benpac
packaging



AEROSOL CANS AND
ALUMINIUM TUBE
LINES

benpac holding ag

Innovation is our promise



Marco Corvi

benpac holding ag is an internationally active group of companies wholly owned by Marco Corvi. The company group distinguishes itself as a provider of comprehensive packaging solutions in the field of aluminium packaging, beverage carton packaging and PET bottle technology. We also offer innovative solutions for filling and labelling technology.

In this way, customers benefit from the top quality of the products and the reliability of the services across all processes. It is a major concern of the group of companies to maintain value creation within the company and to offer customers - through locations worldwide - the best possible delivery conditions at all times.

Marco Corvi

Marco Corvi, is Swiss national, the father of 5 children and started his entrepreneurial journey 25 years ago in his parents' garage. Determination and innovative thinking have always guided his activities. The recognition of markets, opportunities and synergies have significantly influenced the decisions to form benpac holding ag and its structure.

Staying Sustainable, Fashionably



The collapsible aluminum tube industry is branching out, no longer is it purely a matter of providing a vessel to protect the product contents. The need to compete with other tube formats is compelling the industry to look towards printing increasingly more complex design on tubes. With its state-of-the-art offset printing machine, equipped with up to 9 color printing, benpac packaging is well-positioned with its printing solution, which is already the industry benchmark.

Another factor is the voice of money. Be it dollar, euro or Chinese yuan, cost optimization is a necessity to remain competitive in the wake of alternative

packaging avenues, especially for the pharmaceutical industry. The renowned Swiss precision engineering in all benpac packaging equipment provides sustainable solutions, be it for oven design, latexing or capping machines in the collapsible aluminum tube line. All this ultimately translates into cost benefits to customers.

benpac packaging is continuously striving to improve its technology for optimum energy saving results at the same time as achieving higher output and efficiency. This benefits the environment and provides higher profitability to customers.

Preparing for Tomorrow, Today



The increasing demand for high productivity puts a lot of pressure on changeover time. benpac packaging has unique solutions addressing this, which enables the can producer to optimize his productivity.

Similarly, lighter weight cans are the talk of the industry due to raw material saving potential and rising energy costs globally. To meet this trend, we are able to seamlessly and efficiently integrate our equipment into DWI-based systems. In addition, our futuristic oven design optimizes energy consumption. All this provides attractive cost savings for customers.

Looking at line efficiency monitoring systems, benpac packaging provides unmatched visualisation solutions enabling the personal to take full control over it, taking the technology closer to the future of Industry 4.0.

Collapsible Aluminum Tube Production Lines

Cost efficient, turnkey solutions.

- Production speed up to 200 tubes/minute
- Able to test the machine in one location before shipment
- Special know-how in clean room installations for pharmaceutical tube production
- Unmatched line efficiency monitor system setting new industry benchmark

benpac packaging offers complete production lines for collapsible aluminum tubes and is presently the only company making all machines in the line in-house, except for the extrusion press. benpac packaging is thus able to take responsibility for the speed of the entire line when it is maintained per agreed guidelines and service conditions. This gives customers complete confidence in having one point of contact for all their needs: machine upgrades, service on all parts of the line, etc. Furthermore, benpac packaging is unique in being able to test the machine in one location before shipment.

Mindful of the industry's concerns for efficiency and environmental considerations, our Swiss engineered equipment addresses these issues. Our reliable lines provide customers the confidence to consistently and cost effectively produce aluminum tubes to the highest quality, while meeting all industry standards.

benpac packaging has delivered lines to all markets across the world and has special know-how in clean room installations for pharmaceutical tube production, in particular for the Japanese market.



Which line to choose?

Low speed **120 tpm**

Ideal for:

- Markets with special requirements
- Tube producers who need small batch capacities with quick changeover capabilities

Medium speed **165 tpm**

Ideal for:

- Markets seeing good demand for collapsible aluminum tubes
- Tube producers who are looking to expand their capacity to tap into this industry growth

High speed **200 tpm**

Ideal for:

- Markets seeing exponential growth for collapsible aluminum tubes
- Large tube producers who are looking to add capacity or replace old equipment to optimize their production cost

A Closer Glance at the Collapsible Aluminum Tube Line



Impact extrusion press

The impact extrusion press is ideally suited for the manufacture of cans and tubes. An aluminum slug several millimeters thick flows during this process by backward extrusion between die and punch. This is the way thin walled aluminum cylinders are produced.



Tube trimming machine

High precision machines for trimming, thread forming and brushing, including quick change cutting tools. Excellent accessibility with its standard open front design, including vacuum drum in-feed, and innovative butterfly grippers for tube removal.



Chip blow-off unit

Air is blown into the tube to remove residual particles.



Tube annealing oven

New oven for annealing tubes at high temperature (up to 550°C), heated by gas or electric. Its design includes features to reduce energy consumption and ensure a consistent treatment of the tube.



Internal lacquering machine

Available for a wide variety of lacquer applications, from tubes for cosmetics and hair care products, to sensitive high-grade pharmaceutical creams. Machines range from a standard six-spray gun to a maximum nine-spray gun machine enabling three spray-coat layers.



Polymerization oven

Cures the internal lacquer material, available with either electrically heated components or gas-fired combustion. All ovens are with a separate flash-off zone for controlled removal of solvent gases prior to full curing. Available in single row or up to triple row basket design.



Base coating machine

For smooth application of all base coating lacquer varieties to the can wall with the three-roller coating unit. The machine is built with an easy-access open front design for fast and simple size changes. All process speeds are controlled and set on the touch panel.



Offset printing machine

To meet the high quality decoration demands of your customers, we offer machines with up to nine inking units. With servo-motor driven ink rollers, all inking unit functions are individually controlled on the touch panel. The open machine design ensures a clear view of the printing operation and easy access for operators.



Drying ovens

For the drying and curing of lacquer and inks in the decoration section in an economic modular design to achieve maximum energy savings. Heated by gas or electric.



Tube capping machine

We offer high precision capping machines with finely engineered parts for exact cap placement. Genuine double-station machine where caps are applied at half the line speed. The machine is also available with a second vibration bowl for plastic onsets.



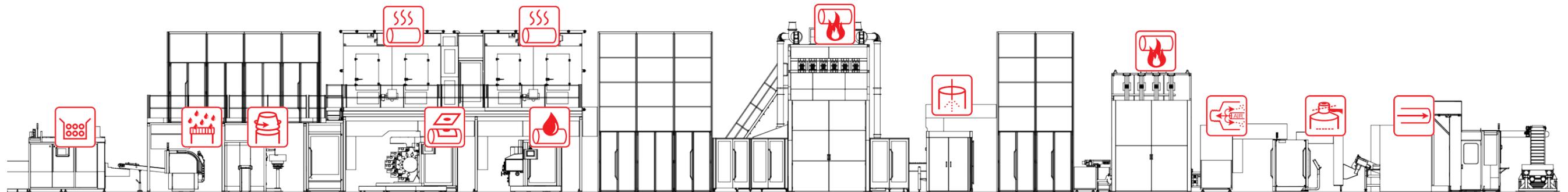
Tube latexing machine

To ensure safe, secure end sealing after filling the tube, the latexing machine applies a band of latex (via centrifugal force) to the open end of the tube. Servo-controlled gun strokes for highest flexibility ensure the exact thickness and placement of the band.



Packing machine

Specialized packing machines for a wide range of aerosol cans and tubes to meet modern packaging requirements of the industry.



Aluminum Aerosol Can Production Line

Control over Quality and Performance.

- Only equipment manufacturer offering production speed from 120 cans/minute to 210 cans/minute
- Includes 9-color offset printing equipment
- Print changeover in just 1 minute with the Twin Decorator
- Able to test the machine in one location before shipment
- Unmatched line efficiency monitor system setting new industry benchmark

Drawing upon the company's 45 year history in tube and can decoration technology, benpac packaging offers complete turnkey lines for aluminum aerosol cans, bottles, marker pens, and cigar tubes. High quality equipment includes trimming/ brushing machines, internal coating machines and a complete decoration plant including nine-color offset printing equipment. All accumulators and ovens are designed and assembled in-house. Furthermore, benpac packaging is unique in being able to test the complete scope of its supply in one location before shipment.

Mindful of the industry's concerns for efficiency and environmental considerations, our Swiss engineered equipment addresses these issues. Our reliable lines provide customers the confidence to consistently and cost effectively produce aluminum aerosol cans to the highest quality, while meeting all industry standards.

benpac packaging holds a unique position in the industry in that it is the only equipment manufacturer offering line speeds ranging from 120 cans per minute (cpm) and going beyond 210 cpm. Furthermore, its proven Twin Decorator system facilitates a print changeover in just 1 minute. These factors motivate new entrants to enter the industry to tap into the booming aerosol market while at the same time keep their CAPEX exposure optimized.



Which line to choose?

Low speed

120 cpm

Ideal for:

- Markets with special requirements
- Can producers who need small batch capacities with quick changeover capabilities

Medium speed

165 cpm

Ideal for:

- Markets seeing good demand for aerosol cans
- Can producers who are looking to expand their capacity to tap into this industry growth

High speed

210 cpm

Ideal for:

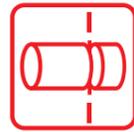
- Markets seeing exponential growth for aerosol cans
- Large can producers who are looking to add capacity or replace old equipment to optimize their production cost

A Closer Glance at the Aluminum Can Line



Impact extrusion press

The impact extrusion press is ideally suited for the manufacture of cans and tubes. An aluminum slug several millimeters thick flows during this process by backward extrusion between die and punch. This is the way thin walled aluminum cylinders are produced.



Can cutting & brushing machine (ZELOS)

High precision machines for trimming and wall brushing rigid cans. Excellent accessibility with its standard open front design including vacuum drum in-feed, and innovative grippers for can removal. Bottom forming station as well as second can-brushing station can be added for special decoration effects. Product length adjustment possible from the Touch panel.



Can washing machine and post-washer

3-6 washing zones for reduced detergent and water consumption, automatic dosing for liquid detergent, water heating in washing and rinsing zones, conductivity sensor in washing and rinsing zones, can dryer, automatic control and servo drive system.



Internal lacquering machine

Available for a wide variety of lacquer applications, including cans for deodorants and hair care products. Machines range from a standard six-spray gun to a maximum nine-spray gun machine enabling three spray-coat layers. This can be upgraded to use powder coatings.



Polymerization oven

Cures the internal lacquer material, available with either electrically heated components or gas-fired combustion. All ovens are with a separate flash-off zone for controlled removal of solvent gases prior to full curing. Available in single row or up to triple row basket design.



Base coating machine

For smooth application of all base coating lacquer varieties to the can wall with the three-roller coating unit. The machine is built with an easy-access open front design for fast and simple size changes. All process speeds are controlled and set on the touch panel.



Offset printing machine

To meet the high quality decoration demands of your customers, we offer machines with up to nine inking units. With servo-motor driven ink rollers, all inking unit functions are individually controlled on the touch panel. The open machine design ensures a clear view of the printing operation and easy access for operators.



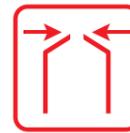
Over-varnishing machine

For the application of clear lacquers to the printed can. This machine includes exactly the same design and features as the base coating machine, including the simple, easy to operate, three-roller coating unit with optional bottom coating features.



Drying ovens

For the drying and curing of lacquer and inks in the decoration section in an economic modular design to achieve maximum energy savings. Heated by gas or electric.



Necking machine

Forming of the can by necking and shaping on the necking machine to create almost any kind of cylindrical shape required.



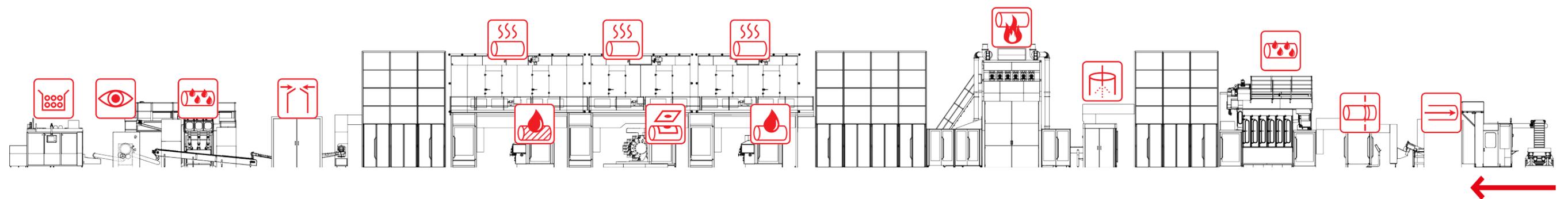
End of Line Inspection System

Prior packing, cans going through a final quality check to ensure the integrity of the products. Different inspection systems can be chosen to check on grease and oil residuals, print quality, proper shape, defects around the curl and the shoulder area as well as checking on pin holes.



Packing machine

Specialized packing machines for a wide range of aerosol cans and tubes to meet modern packaging requirements of the industry. Packing in boxes, bundles or full layer palletizing.





Internal can coating with cleaning



PMA inking units



ZELOS trimming machine

Options Available

- Second coating unit fixed on rails for easy and quick exchange with the other coating unit reduces color changeover to as low as 1 minute
- Anilox Roller System for increased accuracy in lacquer dosing and saving
- Additional special rollers for preventing "ghosting" on the print



full control over efficiency by our innovative line control management

Machine parameters and settings on touch panel Available in a variety of languages.

Fully automatic QC-System

For print quality check and for visual inspection of printing defects, such as color standard, missing dots and colors, distortion, text, dirt and print register.

Wet-on-wet over-varnishing

To print aluminum tubes. This protects the printed area from damage during packaging or transportation. Saves investment costs without increasing the footprint.

Automatic gun cleaning device for internal lacquering machine

This machine includes individual solvent spraying nozzle, and timing of cleaning mode can be selected via the operation panel. Other features available are lacquer heating and the re-circulation system. A pre-heating system can also be an additional option

Quick change ink duct system for inking unit

With segmented doctor blades for advanced ink flow management, or a single doctor blade with setting screws. A ductor and oscillator roller can be prepared for cooling, and the unit can be equipped with a pneumatic controlled ink stirrer.

Preparation for temperature control for base coating and over-varnishing machine

Controls the varnish temperature and viscosity on both the base coating and over-varnishing machines. The squeeze roller and varnish tray roller are prepared to connect to a temperature control unit.

Automatic coating and varnish supply

Closed loop supply of varnish from a dripping tray onto the lower squeeze roller. The excess varnish is collected in a tray, drained to the varnish tank and re-supplied to the dripping tray. The system consists of:

- Dripping tray with flow control sensor
- Special pump

Lubrication systems for polymerization and decoration ovens

- Distribution system to all important bearings on the polymerization and decoration ovens
- Automatic chain lubrication system for polymerization and decoration ovens

Gas or electric oven

Option to use electrically heated ovens instead of gas-fired ovens. Retrofit possible at any time from gas or electrical heating.

Cyclone-type chip removal device for trimming machine

This device collects and disposes of the aluminum chips from the trimming machine.

Nipple setting device for capping machine

For the application of threaded plastic nipples/inserts onto the tube neck prior to capping. Pre torque unit is also available. This is strongly recommended for small tubes.

Leak testing device for latex machine

To check for holes or damages of the tube end before latex is applied.

Magnetic Print Plate Cylinder for fast print changeovers

Energy saving features are of course included in all benpac packaging production lines.

Recent Innovations

Realizing tomorrow's demands.

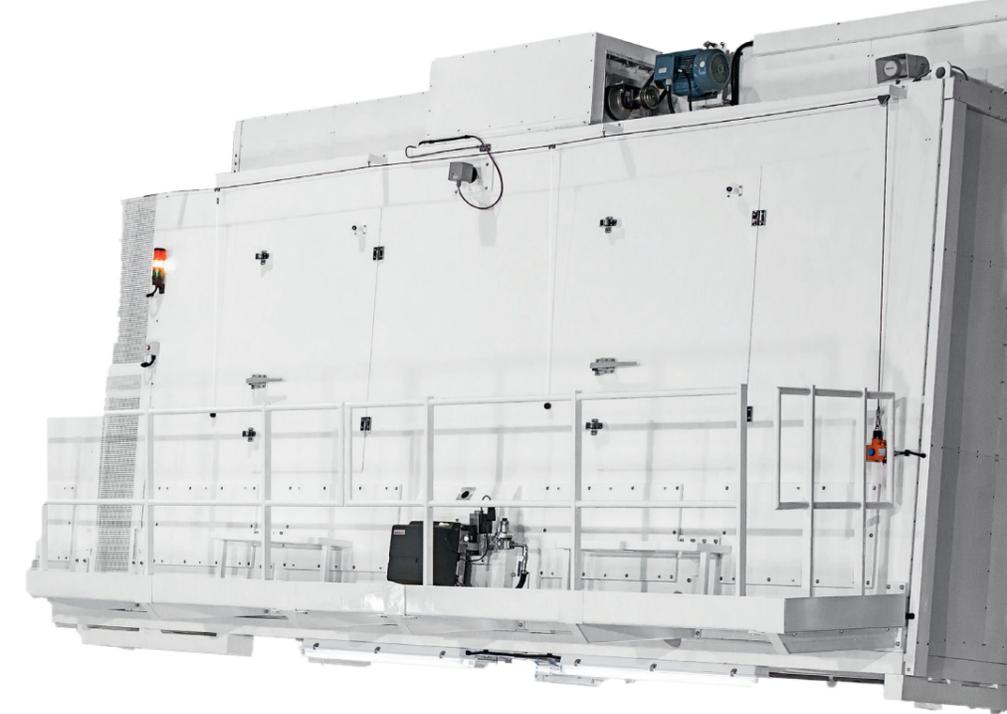


Twin Decorator reduces print changeover time

The aluminum tube and monobloc aerosol can industries are confronted by decreasing "batch sizes" down to 25,000 units or less. This puts pressure on the print changeover time, which is often a lengthy process of several hours.

benpac packaging patented Twin Decorator is an intelligent, robust and easy to operate system reducing print changeover times to as little as 1 minutes. This significantly reduces downtime and increases efficiency by allowing an increased output of between 25-80% depending on the line speed, batch sizes and currently required print changeover times.

This revolutionary system for monobloc aerosol cans and aluminum tubes uses a second printer, complete with drying oven, connecting the whole system in an intelligent way such that the rest of the line should not need to stop for a print change. Besides the additional decorator, the system (patent pending) comprises automatic transfers and bypass systems. These allow a new print job to be set up independently from the actual running batch. Cans are printed and quality can be approved by the QC team before the next batch is started – all without interrupting customers' ongoing production.



Drying oven energy savings

The latest generation of curing ovens introduces intelligent line management that combines regulation of oven standby temperature, fresh air flow and exhaust air. In addition to having a reduced footprint and improved maintenance access, the new generation ovens can reduce energy consumption by up to 50% compared to existing installed lines.

Energy consumption can be further reduced by way of an optional heat exchanger to reuse the heat in the exhaust air.

CIM – compact neck inspection unit

The CIM inspection unit is a compact neck inspection unit for aerosol cans on the outfeed of the necking machine. Located on the transport system between the necking machine and packing station, it is designed to handle the full range of diameters and lengths at production speeds of up to 250 cans/minute, with only a few diameter-related size parts required.

The CIM has a dedicated handling system that stabilizes the can in position. The upper part of the can is freely positioned in front of the camera, which means no holders or any other parts are reflecting the light that could lead to different color shades on the camera image. Furthermore, this inspection unit is operator friendly.

CIM-X – neck, shape, print and leak inspection unit

The second generation CIM-X is able to deliver a solution that can stepwise integrate neck, shape, print and leakage checks in a single machine. In addition to the neck inspection above, a shape check is made across the lateral length of the can by a camera inspection system, the print is a standard check and the leak check can be additionally integrated.

Service Center

Technology is our passion, service our commitment.



- 24/7 hotline service
- highly skilled field engineers
- Remote access service enables immediate assistance wherever customers are located

Driven by a passion for Swiss precision and commitment to customers, we offer premium service parts and ensure your equipment runs at peak performance. Our large service network and expertise give benpac packaging a strong edge in its service capability and performance across many continents.

Call us when you need us

Our 24/7 service hotline offers customers the assurance of fast and comprehensive support.

Enhancing productivity

Our personalized training and machine check-ups are designed to maximize machine productivity and to achieve premium product quality. Topics include: optimizing control parameters, troubleshooting, equipment/line overview, optimizing hardware adjustments, etc.

Minimizing downtime

benpac packaging remote service allows customers to receive real-time online assistance. benpac packaging engineers connect directly to customer equipment over a secure network. The engineers can see the equipment "live", or reconstruct recent events.



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