HIGH-PERFORMANCE CAPPING

Custom-designed machines to suit your applications

customized manufacture to suit your applications
High quality dedicated to capping

World renowned for its expertise of more than 80 years in tailor-made capping solutions, Zalkin offers fully customised machines to suit your needs. Screw-capping, sealing or push-on capping for all types of bottles.

Zalkin machines are designed and manufactured in France and combine the advantages of state-of-the-art technology, high-quality, robust construction, and standards inherited from the spirit of craftsmanship that drives the company, while benefitting from industrial synergies gained from being part of the American group Pro Mach.

More than 300 people constantly attuned to an ever-changing market provide technical expertise to our customers. Responsiveness, flexibility, timely delivery, performance and customer assistance are the values that have made Zalkin a successful company for many years.
Scope

Whatever the specific needs or speed requirement, Zalkin have perfect capping machine solutions to suit various industries:

- PHARMACEUTICALS
- COSMETICS
- WATERS & BEVERAGES
- FOOD
- WINES & SPIRITS
- HOUSEHOLD PRODUCTS

Zalkin Signature Capping

With a wide choice of components, Zalkin designs unique, fully customised machines. Our teams are ready to help you combine the perfect components for the manufacture of your machine, based on the cap used, the required speed, the bottle type and the nature of the product.

- Screw caps, sealed caps, push-on caps in all varieties of materials and shapes.
- From very low to very high speeds, single-head or multi-head cappers, semi-automatic or automatic push-on cappers, there is always a solution with stand-alone machines or turrets to be integrated on to a monobloc.
- Whether the bottle is round or shaped, made of plastic, glass or metal, Zalkin will determine the appropriate machine size and the necessary tooling types.
- For liquid or solid, fragile or aggressive products in any type of environment.
Zalkin uses a combination of components to propose machines specific to each customer.

**Cap feed elevators**
Our cap feed elevators automatically supply the distributor with caps.

<table>
<thead>
<tr>
<th>Type</th>
<th>Application and advantages</th>
<th>Hoppers:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inclined or vertical bucket</td>
<td>Used to transport fragile, heavy or bulky caps without friction or noise.</td>
<td>From 50 l to 3000 l</td>
</tr>
<tr>
<td>Blower-type</td>
<td>For light, sturdy caps</td>
<td>400 l and 1000 l</td>
</tr>
<tr>
<td>«Waterfall»-sorting elevator</td>
<td>For high speeds</td>
<td>Widths: 414 to 620 mm</td>
</tr>
<tr>
<td>Belt of non-oriented caps</td>
<td>A cap conveyor belt may be installed between the cap feed elevator and sorter when the cap feed elevator is far away from the machine.</td>
<td></td>
</tr>
</tbody>
</table>

**Cap sorters**
The sorter automatically orients the caps before they enter the machine.

<table>
<thead>
<tr>
<th>Type</th>
<th>Application and advantages</th>
<th>Zalkin Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>For caps with a diameter greater than the height</td>
<td>CA 12</td>
</tr>
<tr>
<td>GC</td>
<td>For very high speeds</td>
<td>GC 12</td>
</tr>
<tr>
<td>Cap buffer</td>
<td>With a very compact design, the cap buffer is installed on the filling mono-block surround</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enables accumulation of oriented caps of all sizes and shapes</td>
<td></td>
</tr>
</tbody>
</table>

**Cap transfer**
For transporting the caps towards the heads

<table>
<thead>
<tr>
<th>Type</th>
<th>Application and advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inclined chute</td>
<td>For distributors positioned on the machine or a platform</td>
</tr>
<tr>
<td>Single-file belt</td>
<td>For distributors floor mounted or on a platform</td>
</tr>
<tr>
<td>Air conveyor</td>
<td>For distributors floor mounted or on a platform</td>
</tr>
</tbody>
</table>

**Cap pick-up**
For positioning the caps under the capper heads or directly on the bottles.

<table>
<thead>
<tr>
<th>Type</th>
<th>Application and advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pick-and-place device by means of a transfer starwheel</td>
<td>With pockets, for cylindrical plastic caps whose height permits entry into the pocket</td>
</tr>
<tr>
<td>Cap release</td>
<td>For aluminum caps and simple push-on caps</td>
</tr>
</tbody>
</table>

**Bottle tooling**
Used for bottle transfer.

<table>
<thead>
<tr>
<th>Type</th>
<th>Application and advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infeed scroll</td>
<td>Simple, superimposed, front and back</td>
</tr>
<tr>
<td>Quick-release stars and guides</td>
<td>Transfers the bottle into the machine</td>
</tr>
<tr>
<td>Anti-rotation</td>
<td>By belt for PE/PEHD or round glass bottles</td>
</tr>
<tr>
<td></td>
<td>By the neck for PET bottles</td>
</tr>
</tbody>
</table>
Capping Heads
Used to position the cap on the bottle.

<table>
<thead>
<tr>
<th>Type</th>
<th>Application and advantages</th>
<th>Zaïkin models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screwing</td>
<td>Magnetic, flexible and robust, with jaws or chucks</td>
<td>BMS / M5</td>
</tr>
<tr>
<td></td>
<td>- Torque ensured by two concentric permanent magnets</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hysteresis</td>
<td>BHS / H5 / H6</td>
</tr>
<tr>
<td></td>
<td>- Avoid kick-back effect of permanent magnets</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Torque adjustment without tools and quick disassembly of lower parts</td>
<td></td>
</tr>
<tr>
<td>Sealing</td>
<td>For ROPP Pilferproof and Stelcap aluminum caps</td>
<td>B1 / 97 / 104</td>
</tr>
<tr>
<td></td>
<td>- Equipped with 2 thread rollers and 2 skirt rollers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- «No cap, no roll» safety system</td>
<td></td>
</tr>
<tr>
<td>Combined screwing and sealing</td>
<td>For wine and spirits industry</td>
<td>VS10</td>
</tr>
<tr>
<td></td>
<td>- Screw and seal caps in just one operation</td>
<td></td>
</tr>
<tr>
<td>Push-on capping</td>
<td>Mechanical with jaws, form dispensers, vacuum pick-off</td>
<td>Capco / TPV</td>
</tr>
<tr>
<td>Decapping</td>
<td>For plastic or aluminum caps</td>
<td>DRZ</td>
</tr>
<tr>
<td></td>
<td>- Equipped with 4 jaws</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- «No cap, no grip» safety system</td>
<td></td>
</tr>
</tbody>
</table>

Options

Quick-release system for
- Sorter disc
- Cap chute
- Head
- Bottle tooling

![Brushless heads]

High-performance capping
Specific know-how

Ultra-clean and aseptic machines

This range of machines is the solution for packaging an increasing number of sensitive products (milk, beverages free from preservatives, flavored waters), in a more rigorous industrial environment.

These machines integrate the following ultra-clean solutions:

- Isolation between «white zones» and «grey zones»
- Elimination of retention zones
- Limitation, or elimination, of greasing
- Use of materials resistant to increasingly aggressive sterilisation products.

Linear machines

These cappers respond to a specific request from the manufacturers of linear fillers. Some machines are adapted to aseptic packaging environments and to FDA standards where applicable.

The bottles are conveyed in line, step by step in the machine and are capped simultaneously on the same row with 8, 12 or 16 heads. Depending on the configuration and number of rows, speeds up to 30,000 caps per hour are attainable.

Pharmaceutical machines

Based on many years of experience in the core function of screw-capping / push-on capping / sealing, Zalkin has combined proven and qualified technologies (such as mechanical, magnetic, push-on or servo-capping) to design machines specifically suited to pharmaceutical environments.

- Appropriate materials (stainless steel 316, etc.)
- Control systems (PLC, camera, ejection of non-compliant bottles, etc.)
- Design qualifications with Functional Design Specification (FDS), Hardware Design Specification (HDS) and Software Design Specification (SDS)
- FAT (Factory Acceptance Test) and protocol
- Installation Qualification (IQ) and Operational Qualification (OQ).

These machines comply with Good Manufacturing Practice (GMP) requirements and their sleek lines make them easy to maintain and clean.

Options

- Cap or bottle rotary infeed tables
- Loading or unloading table in crystallising heat treatment tables for phials
- Installation of laminar flows

Machines for pumps and triggers

These cappers combine the application of dosing pumps, atomisers (cosmetic products) or triggers (detergents) and, if necessary, push-on capping of conventional caps on various bottles.

- Brushless screw-capping
- Electronic cams
- PLCs
- Cameras

The development of pump distribution solutions contributes to monitoring the whole process. They can reach speeds up to 18,000 bottles per hour.
ZC Line Quality Control Module

This sampling control machine has been designed for an industrial environment, so that it can be installed in bottling lines. ZC line is standardized for multi-format operation (glass, PET and aluminum bottles) and is equipped with 3 simultaneous measuring stations:
- Torque measurement module
- Weighing module certified for use in legal metrology
- Sealing control module.

The Statistical Process Control (SPC) tool processes the collected data for a better analysis by the Quality and Production Departments.

«ZC Lab» Test Laboratory

In order to assist our customers in their new projects and cap/bottle developments, we have designed a test machine unique in the world to perform laboratory tests and simulate actual production conditions. The ZC Lab test machine is capable of simulating the operation of production machines with a view to optimizing the capping process (especially at high speed) and improve packaging (cap-bottle torque).

Simulation parameters:
- Screw-capping, sealing, push-on capping, screw-capping - sealing
- Cam profile
- Head rotation speed
- Vertical pressure
- Speed

It is equipped with statistical tools to calculate the values of the opening torque Process Capability and Process Capability Index (CP, CPK, etc).

Stand-alone single-head machines

Single-head capping machines can seal, screw and push on caps at speeds ranging from 600 to 3,500 caps per hour (depending on the machine model and the cap being used). Three models are available:

TM3-type Semi-automatic capper

TM3-type single-head machines can seal, screw and push-on caps (caps are manually placed by the operator) up to 800 caps per hour. It is the ideal equipment for laboratories and small volume manual production.

TM125-type automatic capper

The TM125-type single-head machines are dedicated to sealing aluminum caps (direct cap pick off). The maximum speed of this equipment is about 3,500 caps per hour (depending on the cap type and the bottle being processed).

TM200-type automatic capper

The TM200-type single-head machines can screw or push on caps requiring pick-and-place, and seal caps requiring cap release at a speed of about 2,500 caps per hour. This machine can be single or double, in order to combine multiple functions (e.g. fitting of insert, then screw capping).

Options available for TM125 / TM200-type automatic cappers
- Steam or nitrogen injection systems
- Programmable logic controller and operator interface
- Various detections (presence of integrity seals before push-on capping, presence of caps at the machine outfeed, etc.)
CA-type cappers
CA-type rotary capping machines can seal, screw and push on caps at speeds ranging from 3,500 to 60,000 caps per hour (depending on the cap type and bottle being used). They are equipped with 3 to 24 heads and offered in different pitch circle diameters from 300 to 720 mm. This machine can come with single or multiple turrets to combine various functions (different caps on a single bottle).

DR and MS-type decappers
Rotary decappers remove plastic and aluminum caps from returnable PET and glass bottles at speeds up to 60,000 caps per hour. They are equipped with 3 to 24 heads and offered in different pitch circle diameters from 360 to 1050 mm. Two models are available to adapt to line layout:
- The DR decapper is equipped with an inline conveyor.
- The MS decapper is equipped with parallel infeed and outfeed conveyors.

Options available for CA-type cappers
- Synchronisation (mechanical or electronic) with the filler in case of very high speed or fragile bottles
- Any type of programmable logic controller and operator interface (HMI).

Available options:
- Discharge back-up table
- «Bottle stop» system to empty the machine
- Any type of programmable logic controller and operator interface (HMI)

Screw-capping, sealing and push-on capping turrets
The turrets are integrated on the filling mono-blocks and are adapted to the pitch of the filler. They can be equipped with 3 to 40 heads and offered in different pitch circle diameters up to 2000 mm. They can seal, screw and push caps on at speeds up to 100,000 caps per hour.

Screw-capping turret
For plastic screw caps
The caps are picked by means of a transfer starwheel with pockets or pegs

Sealing turret
For all Roll-on caps with short and long skirts
Direct pick-off of caps by bottle (cap release)

Push-on capping turret
Mechanical or vacuum pick-off capping for plastic push-on caps
The caps are picked by means of a transfer starwheel with pockets or pegs

Available options:
- Steam injection systems
- Inerting system (nitrogen)
- Dust removal and sterilisation system (via UV lamp or pulsed light)
- Various capping control systems