

ALU AND STERICAP

CAPPING MACHINES



ALU AND STERICAP CAPPING MACHINES

A primary packaging protects parenteral drugs against environmental factors, including potential microbial contamination throughout shelf life.

The most commonly used configuration for these drugs is the glass vial, sealed with a rubber stopper and an aluminium crimp cap.

In combination with an adequately designed and controlled aseptic fill-finish process, a well-designed capping process is indispensable to ensure product quality and integrity and to minimize rejections during the manufacturing process.



THE LONGSTANDING EXPERIENCE IN THE DEVELOPMENT AND PRODUCTION OF CAPPING MACHINES FOR VIALS HAS BEEN CHANNELLED INTO ALU AND STERICAP.

Unique in style and built to deliver top-level performance, IMA Life capping machines will drive your productivity to a higher level of efficiency.

The range includes the following cappers:

- ALU series for medium-high speed requirements
- STERICAP for low-medium speed requirements

Both machines feature a broad range of application capabilities: from traditional aluminium caps, with or without flip-off, to the most sophisticated caps such as add-vantage, bio-set and monovial closures.



MAIN FEATURES OF IMA CAPPING MACHINES

- VERY LOW PARTICLE GENERATION SYSTEM TO AVOID PRODUCT CONTAMINATION
- PNEUMATIC CIRCUIT TO KEEP CONSTANT APPLIED VERTICAL FORCE
- 100% MEASUREMENT AND CONTROL OF VERTICAL COMPRESSION FORCE
- LOW SIZE CHANGEOVER AND SET-UP TIME
- LITTLE MAINTENANCE REQUIRED
- SUITABLE FOR CONVENTIONAL LAMINAR FLOW AND ISOLATION ENCLOSURE
- EQUIPPED WITH SIEMENS PLC AND WITH A USER-FRIENDLY CONTROL PANEL



ALU SERIES

ALU IS A ROTARY CAPPING MACHINE REACHING MEDIUM-HIGH SPEEDS.

Two different models are available:

- ALU 400 with 8 capping heads
- ALU 600 with 12 capping heads

The machine is particularly suitable for sealing aseptic products. Its design criteria, such as reduced dimensions, ergonomics, reduced particle generation and the geometry facilitating the unidirectional laminar flow allow the machine to be installed in classified areas, in conventional sterile rooms or under isolation technology.





ALU SERIES



VIAL FEEDING AND TRANSPORT

ALU capping machines can be connected with different vial feeding systems:

- In-line from an upstream machine
- Rotary table

After feeding, the vials are transported by an infeed belt and a scroll synchronized with the first transport starwheel (positive transport). Various types of sensors can be installed to check:

- Stopper presence
- Stopper presence and height
- Correct positioning of stopper on vial with a visual system.

CAPPING UNIT

The capping unit is adjustable in height and seals by rotating the vial against an idle roller, guaranteeing maximum sealing precision and minimizing particle generation. The rotation of the vial is generated from the supporting plate and the capping head which are mechanically synchronized.

In case of a missing stopper, a piston blocks the alu-cap release from the chute.

CAPPING PARAMETER CONTROL

Pneumatic cylinders keep the vertical force applied constant on the vials during the capping process.

- 100% of production controlled by load cell measuring the vertical pressure with automatic rejection of vials out of range
- Easy adjustment of the vertical force
- Rotation speed adjustment from the control panel via brushless motor.

VIAL OUTFEED AND UNLOADING

After the capping phase, vial outfeed is performed by a starwheel (positive transport).

Various types of controls can be installed to check:

- Alu-cap presence at the outfeed starwheel
- Good crimp quality
- Colour of the flip-off caps

Incorrectly closed vials are rejected on an independent conveyor belt. A rejection confirmation sensor checks the effective rejection of the vial.



OPTIONAL FEATURES

- Coding unit and camera vision system for data reading and check
- Production parameter printout or storing
- Ink-jet printer
- Allen Bradley PLC
- Servo-assisted adjustment of vial height
- Alu-cap lifting hopper integrated in the safety hood
- Automatic feeders for unstable vials
- Vial rejection before capping in case of misplaced or missing stopper
- Vial rejection after capping in case of misplaced or missing alu-cap, or missing coding.

STERICAP

STERICAP IS A ROTARY CAPPING MACHINE FOR LOW-MEDIUM SPEED REQUIREMENTS.

Available as one model, it can be fitted with 3 or 6 capping heads depending on customer requirements.

The machine is particularly suitable for sealing aseptic products. Its compact design ensures air turbulence minimization and offers the best conditions for H₂O₂ exposure and barrier system operations.





STERICAP



VIAL FEEDING AND TRANSPORT

STERICAP capping machine can be connected with different vial feeding systems:

- In-line from an upstream machine
- Rotary table

After feeding, the vials are transported by an infeed conveyor belt equipped with counter guide and minimum load sensor.

The first transport starwheel is equipped with different sensors to check vial presence and stopper presence and height with function to block cap releasing.

CAPPING UNIT

The capping unit is adjustable in height and seals by means of rotary heads, which rotate the vials against a single idle blade fitted in the centre of the carousel.

The required pressure value is set directly from the control panel. The sealing pressure control system automatically keeps the values within the pre-set limits. The machine stops automatically when the values are not inside the pre-set range.



VIAL OUTFEED AND UNLOADING

After the capping phase, a sensor checks alu-cap presence. In case of a missing cap, the vial is rejected on a dedicated conveyor belt with rejection confirmation sensor. All the correctly closed vials are conveyed on a different belt equipped with counter guides and maximum load sensor. The outfeed starwheel is vacuum-assisted to manage the two exit belts.

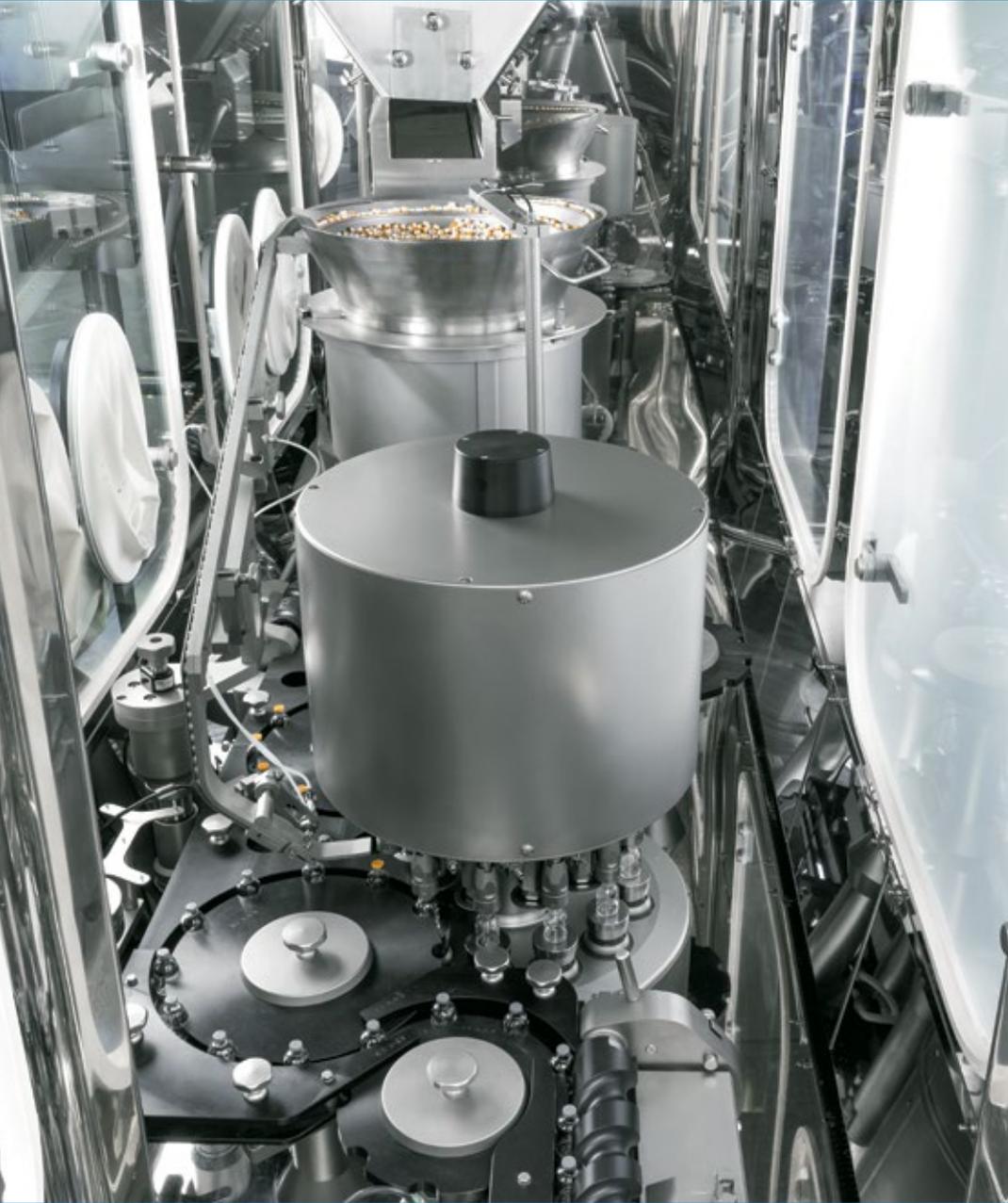
Various types of controls can be installed to check:

- Good crimp quality
- Colour of the flip-off caps.

OPTIONAL FEATURES

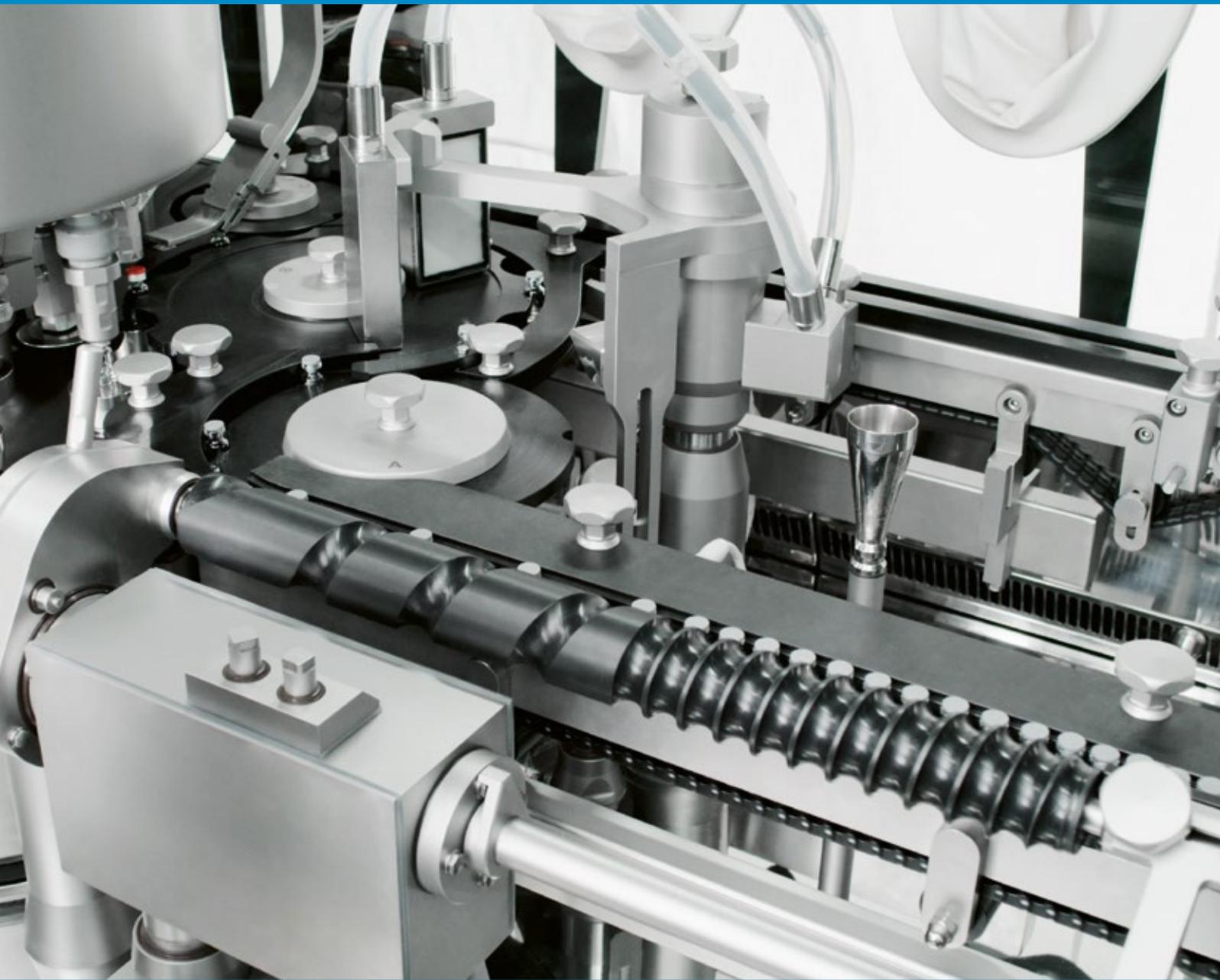
- Coding unit and camera vision system for data reading and check
- Capping head adjustment by servomotor, controlled by the operator's interface
- Load cell to detect the vertical pressure applied during sealing
- Vision systems to check stopper position and crimp quality
- Tilting unit for alu-caps loading into the pre-feeder, complete with passive oRABS and gloves
- Alu-caps pre-feeding unit integrated inside the machine
- Pre-arrangement for printing unit integration
- Automatic tray loader at machine exit.

ISOLATION TECHNOLOGY AND SPECIAL APPLICATIONS



VIAL FEEDING AND TRANSPORT

Both ALU and STERICAP are often the ideal completion of aseptic processing lines where a high degree of sterility is required. For this purpose, special aseptic applications have been developed under open or closed RABS or isolation systems.

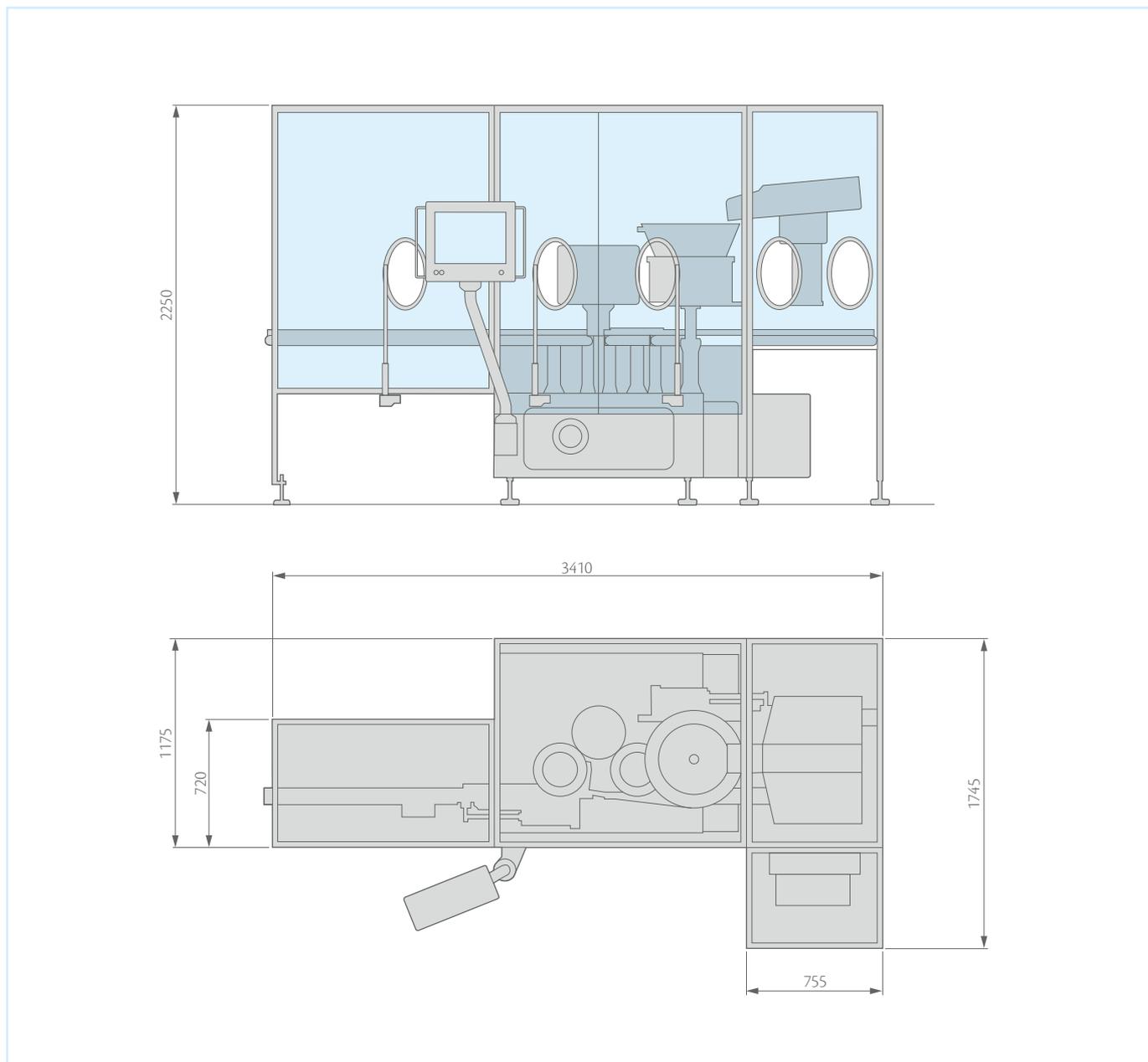


MAIN FEATURES

- INCREASED DISTANCE BETWEEN VIALS AND MACHINE TOP TO AVOID LAMINAR FLOW TURBULENCE
- COMPLETE VHP STERILIZATION
- VERY SIMPLE SIZE CHANGEOVER TO FACILITATE OPERATIONS
- REDUCED FOOTPRINT
- EASY-TO-ACCESS HMI

TECHNICAL DATA

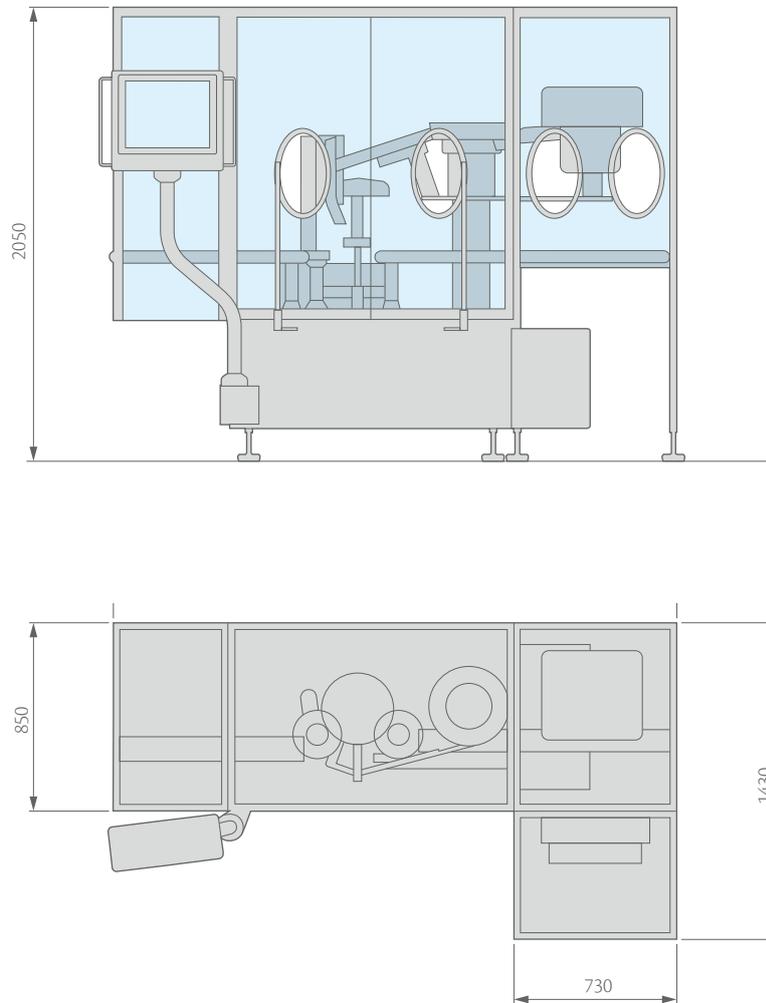
ALU



ALU SERIES		
Machine model	ALU 400	ALU 600
Capping heads	8	12
Output (vials/minute)	400	600
Standard voltage	400 V - 50 Hz	
Installed power (kW)	12	
Weight (kg)	1800	1900
Vial diameter (mm)*	14-52	
Vial height (mm)	35-110	

* 85 mm in case of large volume configuration

STERICAP



STERICAP		
Capping heads	3	6
Output (vials/minute)	125	300
Standard voltage	400 V - 50 Hz	
Installed power (kW)	6	
Weight (kg)	1500	
Vial diameter (mm)*	14-52	
Vial height (mm)	35-110	

* 85 mm in case of large volume configuration

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