DECONTAMINATION TECHNOLOGY

EXTERNAL WASHERS FOR AMPOULES AND VIALS

IMA LIFE

Aseptic Processing & Freeze Drying Solutions

DECONTAMINATION TECHNOLOGY

THE PHARMACEUTICAL INDUSTRY AND SAFETY REGULATORS ARE PLACING GREATER IMPORTANCE ON USING EXTERNAL WASHERS TO REMOVE PRODUCT PARTICLES FROM THE OUTSIDE OF VIALS AND AMPOULES.

This process minimizes the legal risk of long-term exposure for packaging operators and medical personnel who frequently handle cytotoxic products or potent compounds.
The decontamination process can be carried out using water or by adding to the water a dedicated washing media in case of toxic products, in order to avoid any risk of contamination.

IMA Life external washers comply with the present market requirements and are the ideal solution for any output.
The range includes the following models:

- **HYDRA 100/300/400** vial rotary washers for low to high-speed requirements
- **VEGA 400** ampoule rotary washer for high-speed requirements

Both models can be supplied in line with filling and closing machines.

MAIN FEATURES OF IMA EXTERNAL WASHERS

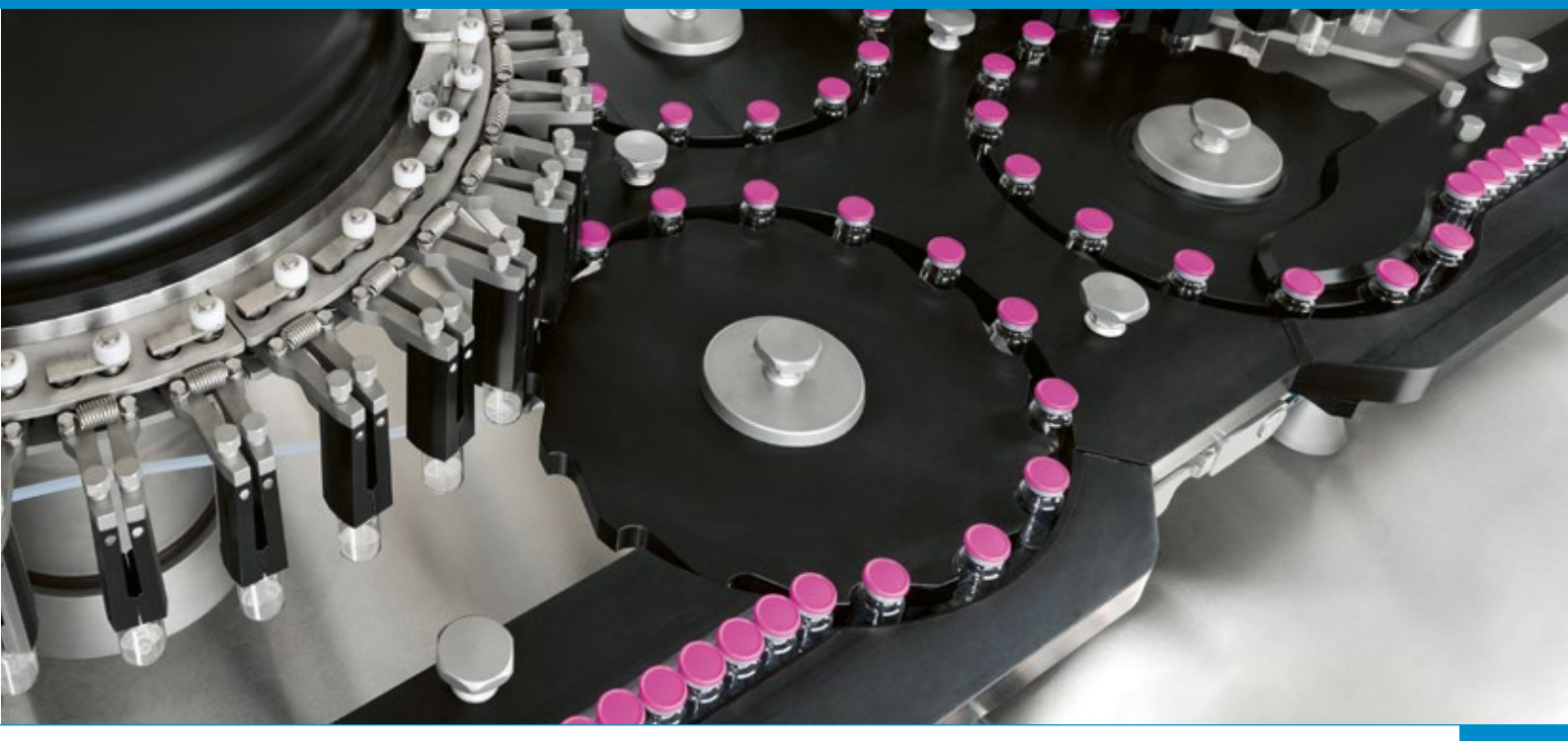
- Rounded corners inside the processing area improving water drainage and machine cleanability
- Complete separation between process and mechanical areas by means of special seals
- Segregated washing circuits
- No cross contamination between containers and machine: steady water flow to ensure the separation of the contamination agent and its dragging towards the drainage point
- Reduced machine footprint to save space in the production area: drives and washing circuit housed in the machine frame
- Easy access to all machine areas
- Simple mechanical drives with low maintenance time impact
- Machines can be pre-arranged with RABS (Restricted Access Barrier System) or installed within an isolator enclosure
- Siemens PLC and HMI guaranteeing repeatability and safety of the whole process

HYDRA 100/300/400

IDEAL FOR COMPLETION OF ASEPTIC PROCESSING LINES, HYDRA 100/300/400 ARE SPECIFICALLY DESIGNED TO PERFORM THE DECONTAMINATION OF EXTERNAL SURFACES OF GLASS OR PLASTIC CYLINDRICAL CONTAINERS (BOTTLES, VIALS, ETC.) WHICH COULD HAVE BEEN POTENTIALLY CONTAMINATED BY THE PRODUCT DURING THE FILLING PROCESS.

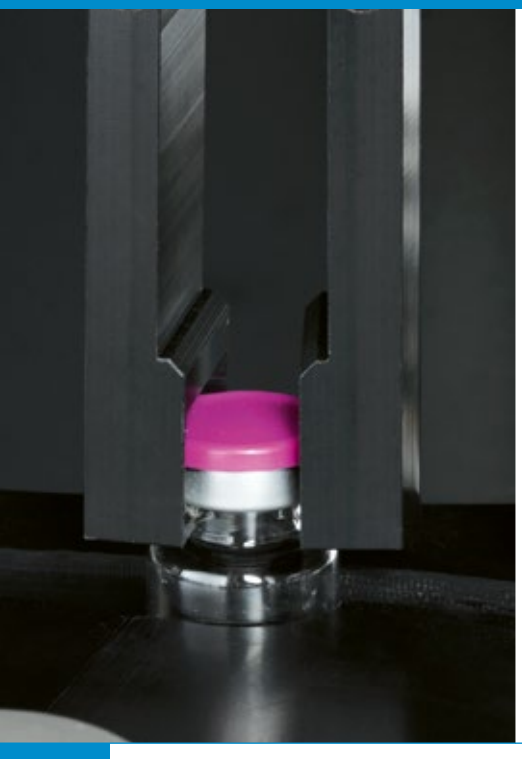
Hydra 100/300 are designed with one central carousel which rotates and guides the vials through the washing and drying phases.

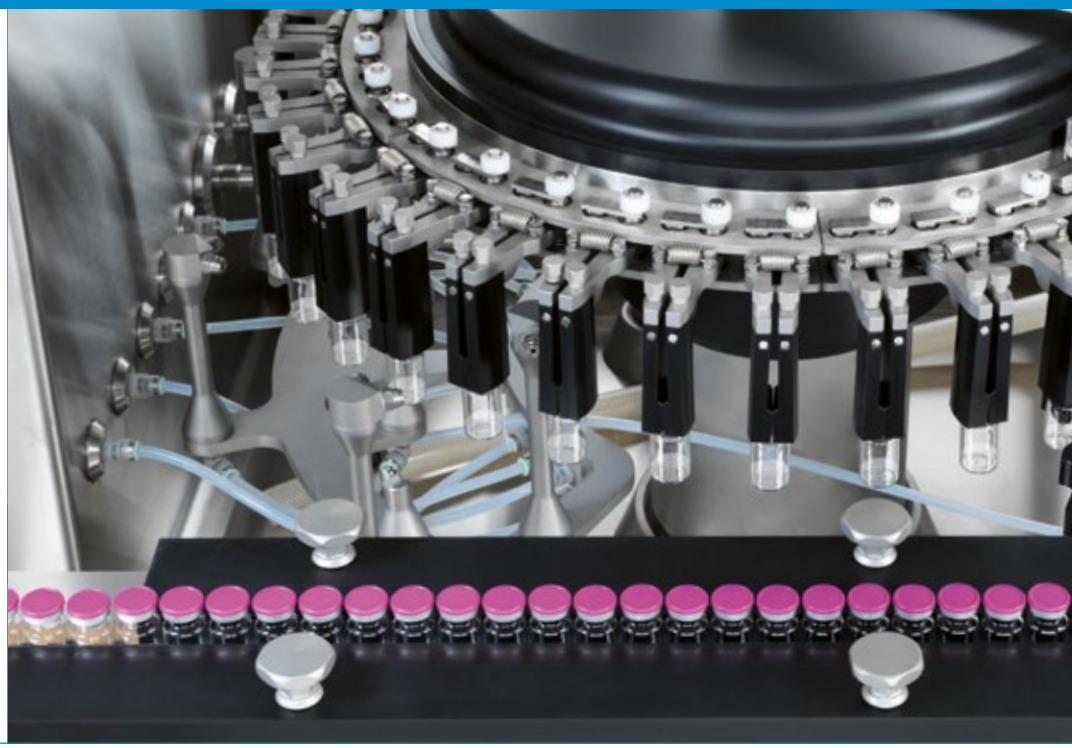
The infeed belt transfers the vials to the infeed starwheel which conveys the containers to the main carousel. Plastic grippers pick the vials up and move them near the washing nozzles and the drying blades. At the end of the turret rotation, containers are picked up by another starwheel that conveys them onto the outfeed belt made of perforated plastic to guarantee residual water drainage. Once dried, the outfeed belt guides the vials out of the machine.



Hydra 400 is designed according to the same criteria as Hydra 100/300, but is fitted with two carousels, one for washing and one for drying, enabling higher speeds.

HYDRA 100/300/400





GRIPPERS

The design of the grippers prevents damage to the caps and protects the closures from possible water spillages which may cause fungal or bacteria growth. In the case of different vial sizes with the same cap size, there is no need to change the grippers.

CAROUSEL AND WASHING NOZZLES

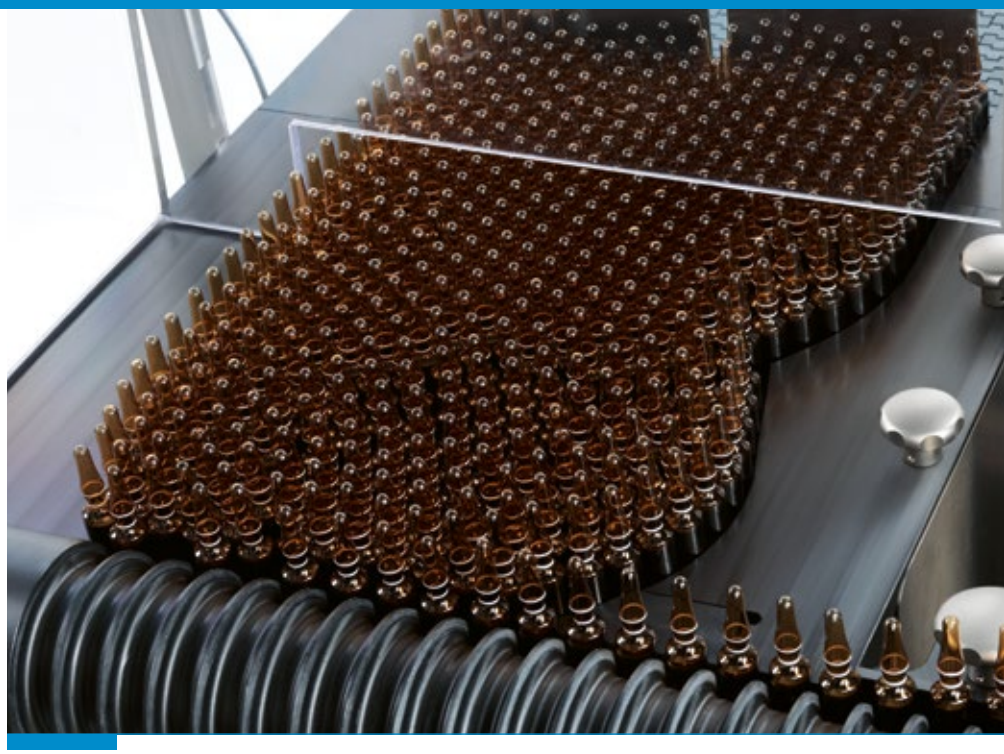
The carousel and the washing nozzles are height adjustable according to vial dimensions. The strategic position of the nozzles creates a water spiral all around the vials removing any possible particles towards the bottom end of the vial, which is then washed by a nozzle placed down the water tank.

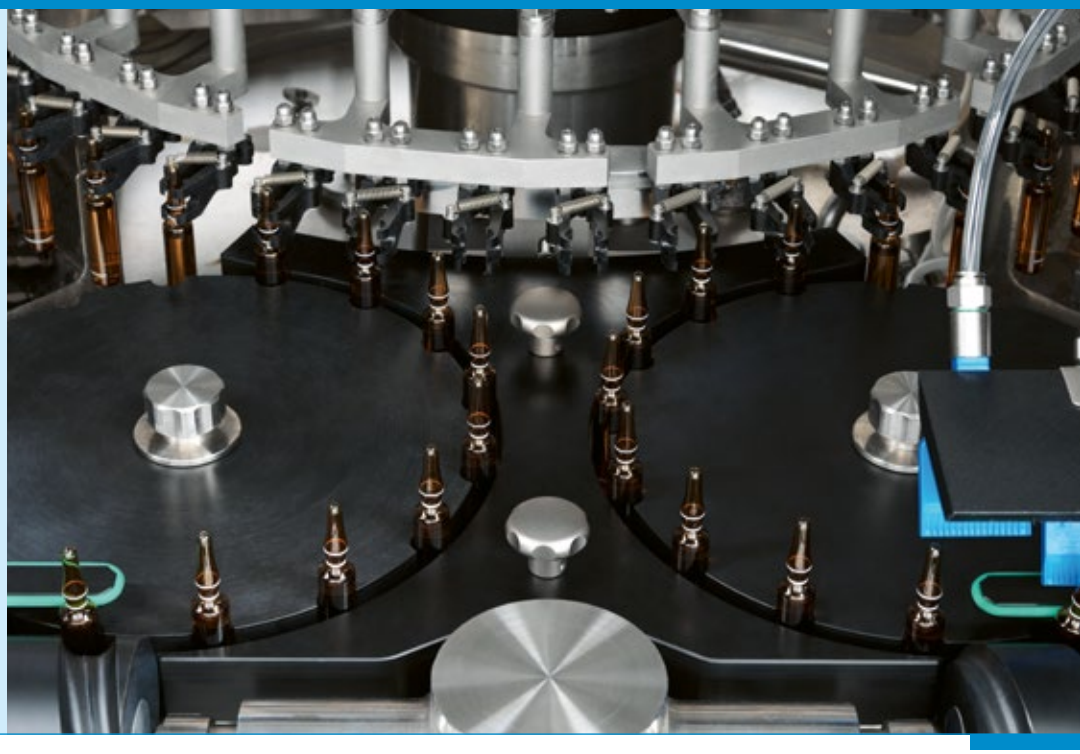
DRYING SYSTEM

The drying unit consists of blowing stations with shaped drying blades to remove drops and moisture from the outer surface of the vials while they are transferred by the carousel. A high-efficiency nozzle is installed on the exit starwheel to remove the last drops of residual water collected on the bottom side of the container. The blowing system does not use hot air.

VEGA 400

VEGA 400 IS DESIGNED TO DECONTAMINATE THE EXTERNAL SURFACE OF AMPOULES AND SMALL GLASS VIALS AFTER THE FILLING AND CLOSING PROCESS.





The containers are placed on a conveyor belt which keeps them compact during the loading phase. A scroll gently transfers the containers from the infeed belt to the transport starwheel where they are picked up by the pincers mounted on the central carousel.
The central carousel guides the containers through the washing station for a 280° rotation. Once the turret rotation has been completed, containers are picked up by another starwheel that conveys them onto the outfeed belt made of perforated plastic to ensure residual water drainage. The drying phase starts immediately after by means of apposite blowing blades. At the end of the process, the transport belt transfers the containers out of the machine.

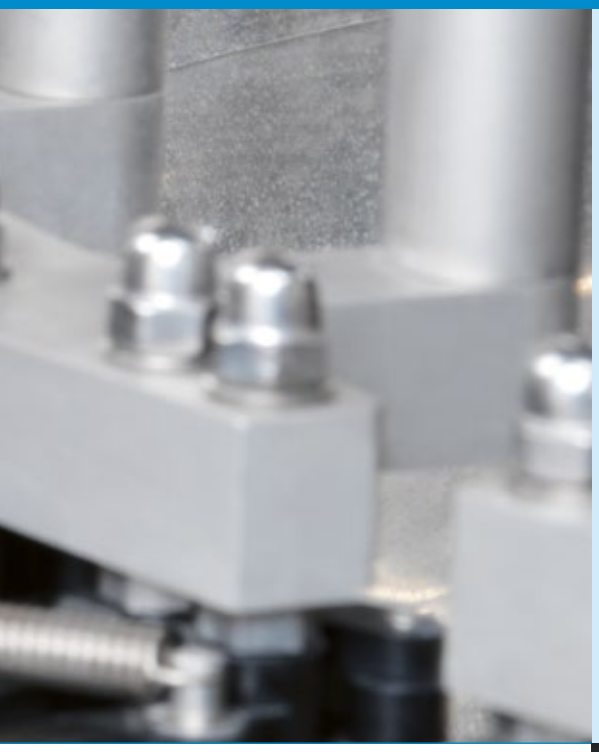
VEGA 400

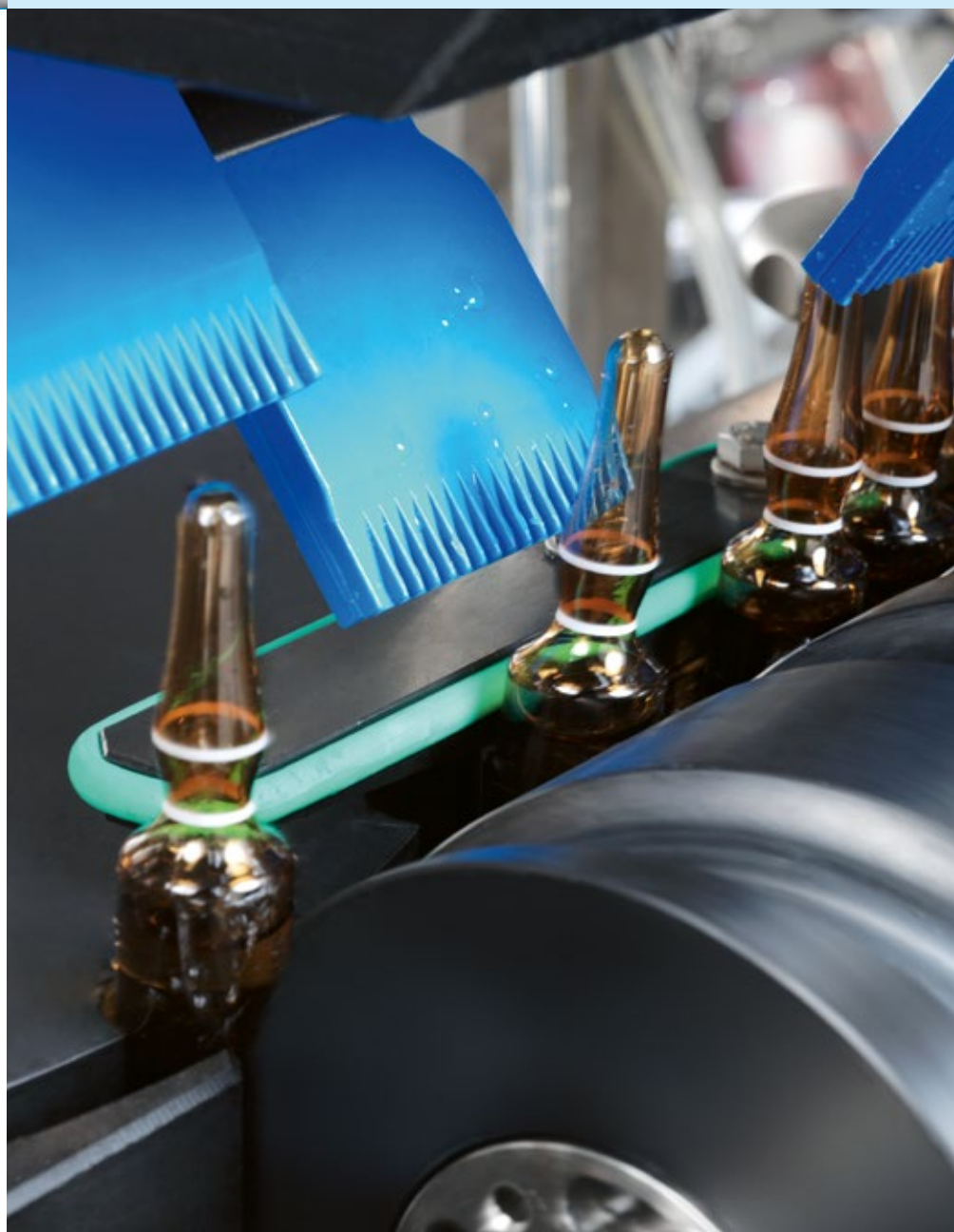
GRIPPERS

Pincer design and the type of grasp have been engineered to avoid ampoules sliding during the transport phase. There is no need to change the pincers in the case of different container sizes.

CAROUSEL AND WASHING NOZZLES

The carousel and the spray nozzles can be adjusted in height according to the dimensions of the containers. The orientation and the position of the spray nozzles allow the water to create a perfect flow around the container, thus ensuring perfect decontamination. Another spray nozzle placed on the bottom side washes and removes possible product particles present on the container bottom.





DRYING SYSTEM

The drying unit consists of shaped skimming blades, connected to a high-capacity blower, which remove all the water drops and dry the containers. The system does not use hot air. A suction unit placed on the outfeed conveyer belt removes the water from the bottom of the container. The necessary vacuum is created by an aspirator which collects the residual water in a tank by means of its manifold. The tank is then drained via an automatic valve.

WASHING CIRCUIT CHARACTERISTICS

WASHING CIRCUIT CHARACTERISTICS

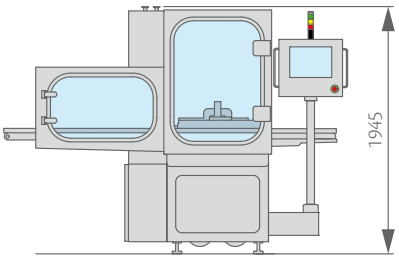
- External connection to the water feed
- Electro-pneumatic sanitary valves for flow management
- Water pressure transmitter with display
- Collecting manifold for water drainage

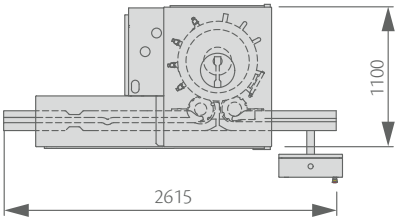
RECYCLE WASHING CIRCUIT

- Additional circuit with tank for manual loading of detergent/chemical agent with peristaltic pump
- Drying unit on the exit starwheel for increased efficiency or for shaped containers
- Temperature monitoring on water circuit
- Spray gun for manual decontamination/drying inside isolator enclosures
- Automatic WIP of size parts
- Allen Bradley PLC

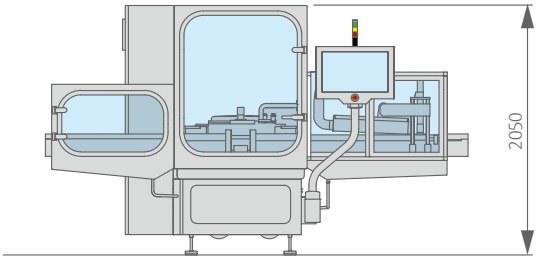
TECHNICAL DATA

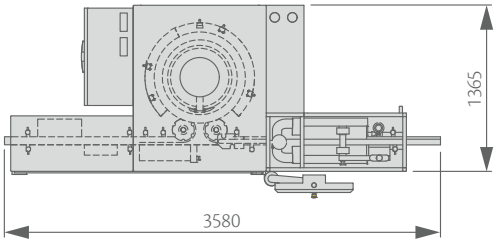
HYDRA 100





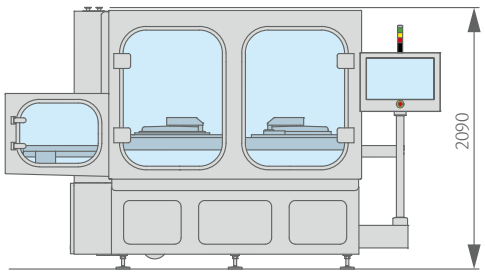
HYDRA 300

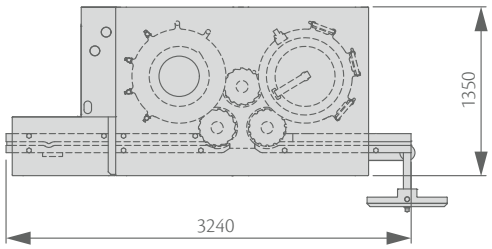




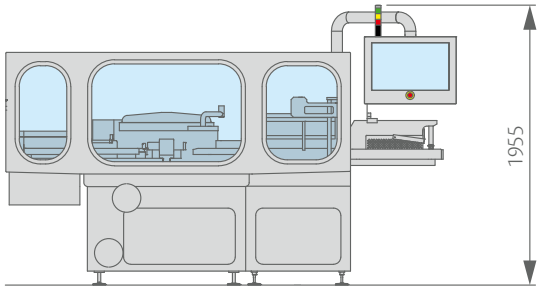
	HYDRA 100	HYDRA 300	HYDRA 400
Washing stations (up to)	4	6	8
Vial range Ø (mm)	14.75-52	14.75-66	14-54
Vial height (mm)	34.5-110	34.5-136	34-110
Output (vials/minute)	60 with vial Ø 52 mm 150 with max. vial Ø 24 mm	150 with vial Ø 32-60 mm 300 with vial Ø 32 mm	200 with vial Ø 33-54 mm 400 with vial Ø 32 mm
Water consumption (litres/hour)	400-600	600-900	900-1200
Water pressure (bar)	2.5-4		
Compressed air consumption (litres/minute)	3000	3100	3200
Compressed air pressure (bar)	6		
Standard voltage	400 V - 50 Hz		
Installed power (kW)	5		
Weight (kg)	1200	1600	2000

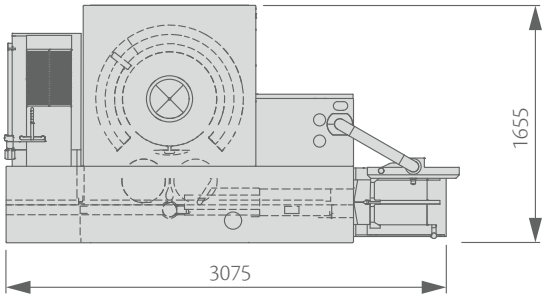
HYDRA 400





VEGA 400





	VEGA 400
Washing stations (up to)	7
Maximum vial Ø (mm)	52
Maximum vial height (mm)	110
Ampoule range Ø (mm)	10-22.5
Ampoule height (mm)	35-110
Output (containers/minute)	400
Water consumption (litres/hour)	600-900
Water pressure (bar)	2.5-4
Compressed air consumption (litres/minute)	3100
Compressed air pressure (bar)	6
Standard voltage	400 V - 50 Hz
Installed power (kW)	5
Weight (kg)	2700

ima.it

March 2024 - 9911L3Y20100

IMA S.p.A. - **LIFE division**
marketing.life.it@ima.it • ima.it/pharma/brands/ima-life
FOLLOW IMA