

# HYDRA

LINEAR WASHING MACHINE FOR VIALS AND BOTTLES



# HYDRA

Hydra washing machines are the result of many years of research and development focusing on the decontamination of containers for injectable drugs. The machines are made entirely of 304 or 316L stainless steel and designed according to the cGMP guidelines and the highest quality standards required by the pharmaceutical industry.

Conceived to wash all vial sizes used in the pharmaceutical field, the Hydra range can reach a speed of up to 39,600 vials/hour. Upon request, plastic and oval containers can also be washed.

The machine can be equipped for direct connection to automatic container feeding systems (depacking or inspection machines) or to feeding conveyors.

Containers can be discharged into trays. Alternatively, Hydra can be connected to a depyrogenating tunnel by a special "first-in first-out" off-set loading system.



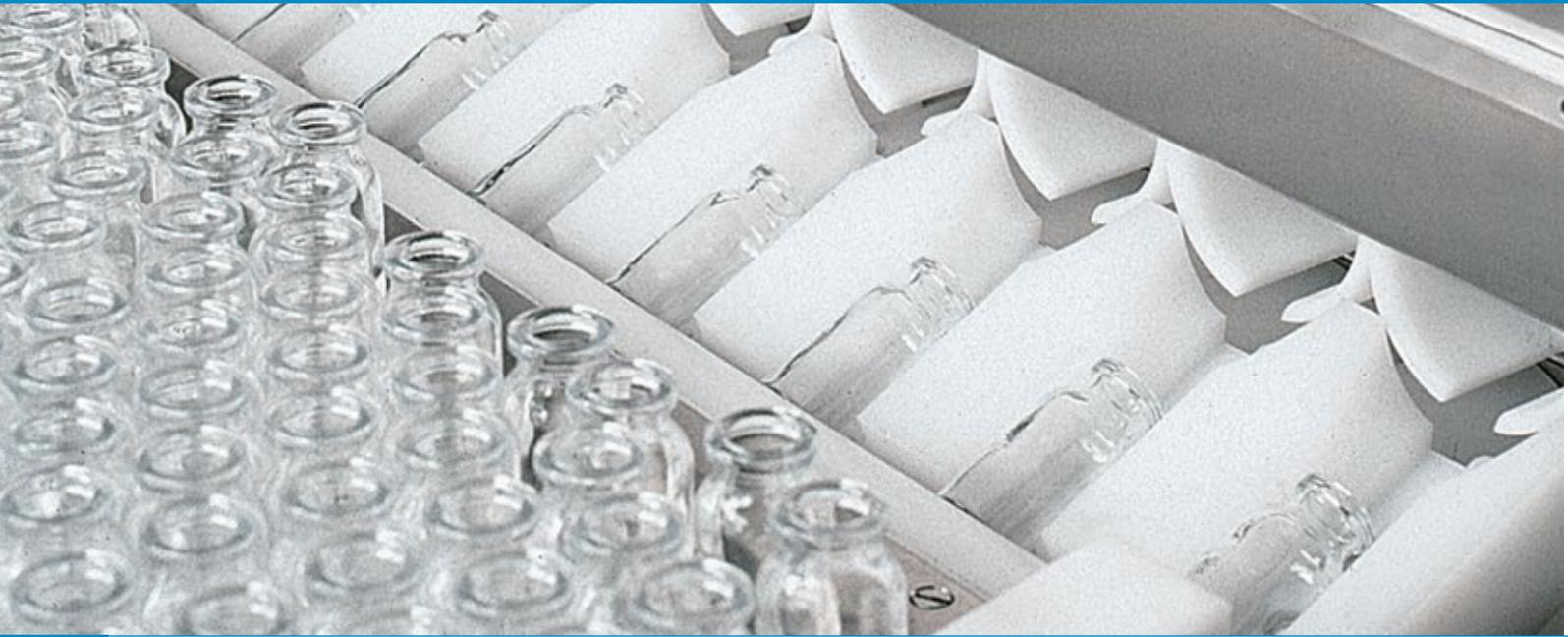
Hydra linear washing machine in line with Blue Galaxy depyrogenating tunnel.



- 8 WASHING STATIONS IN THE STANDARD VERSION, INCREASING UP TO 13 ON REQUEST.
- SPECIAL UPPER GUIDE RAIL FOR CONTAINERS ALLOWING FOR WASHING AT HIGH PRESSURE WITHOUT VIBRATIONS OR MOVEMENTS.
- COMPLETE SEGREGATION BETWEEN PROCESS, CIRCUIT AND MECHANICAL AREAS TO AVOID CROSS CONTAMINATION.
- NO VIAL BREAKAGES THANKS TO A SYSTEM OF LEVERS, INCORPORATING SPRING-LOADED TELESCOPIC OVERLOADS, DRIVING MACHINE MOVEMENTS, INCLUDING RAISING OF THE WASHING NEEDLES.



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## MACHINE WORKFLOW

The operator or a depacking machine loads the containers onto the feeding conveyor.

The conveyor pushes the containers up to the separating group where an elevator takes the leading row and introduces the containers into the corresponding baskets. A system checks if all containers have been correctly introduced into the baskets.

The carriage, which houses the manifolds with the washing needles, moves vertically and when the needles are inside the containers the relevant valves open and the containers are washed.

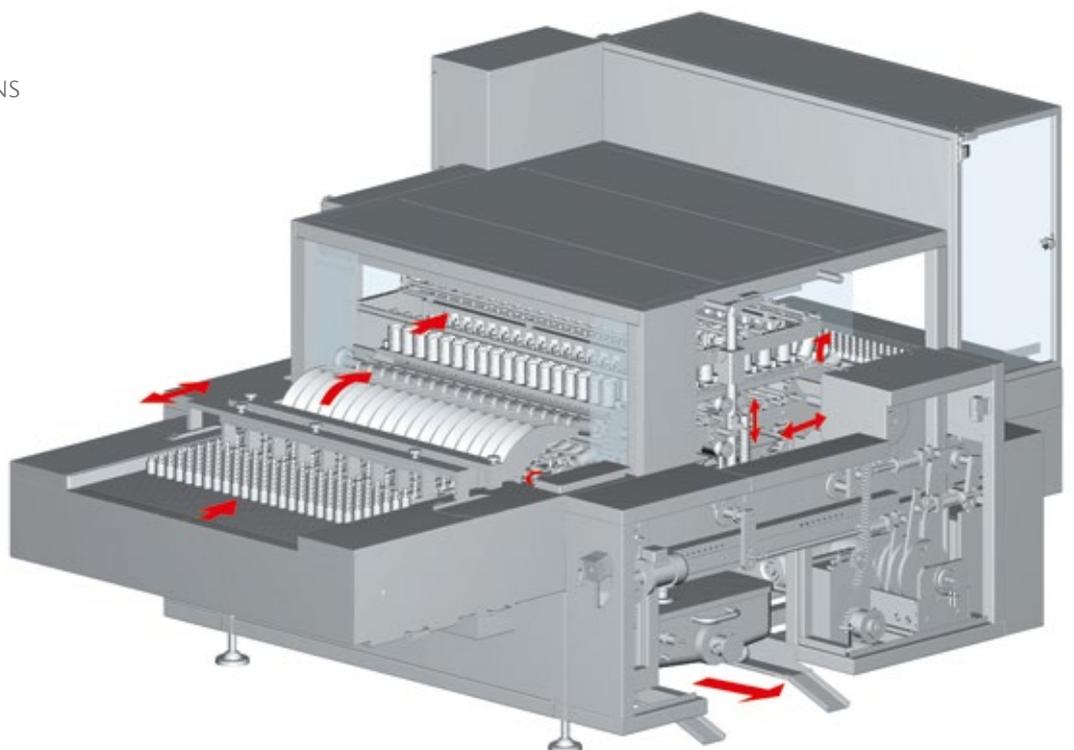
Once the washing cycle has been completed, the baskets stop in a horizontal position and the containers are pushed out of the basket onto a cradle, which lifts the containers to a standing position on the discharge plate.

- NO DRIPPING OF CONTAMINATED WATER FROM THE BASKETS ONTO THE VIALS THANKS TO THE POSITIVE DISCHARGE OF CONTAINERS FROM THE BASKETS.
- NO CROSS CONTAMINATION BETWEEN PROCESS, CIRCUIT AND MECHANICAL AREAS.



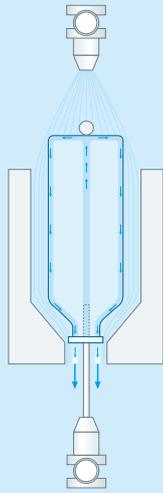
## MAIN OPTIONAL FEATURES

- AUTOMATIC DRAINAGE
- STEAM IN PLACE
- TEMPERATURE RECORDING
- STEAMING STATIONS
- SILICONISING STATIONS
- DOUBLE RECYCLING



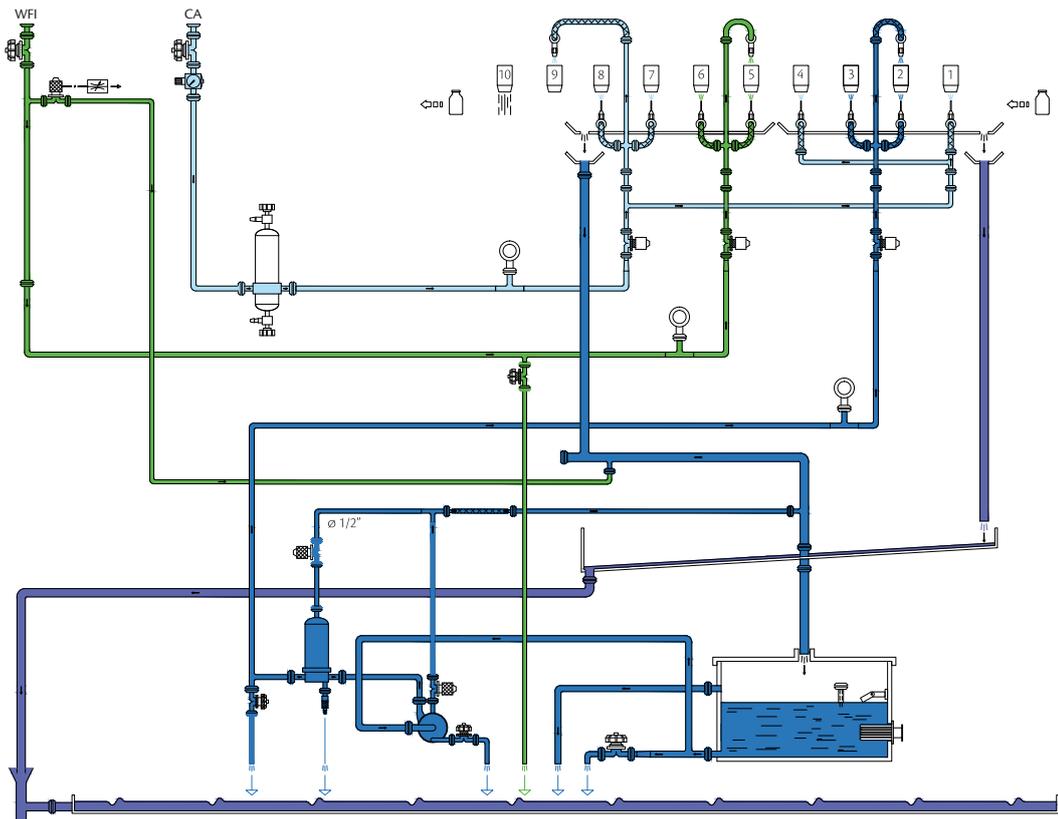


THE WATER FLOWS AROUND THE EXTERNAL SURFACE OF THE CONTAINER THANKS TO THE PRESSURE GENERATED BY THE WATER SPRAYED OUT OF THE NEEDLES, WHICH LIFTS THE CONTAINERS DURING THE WASHING PHASE.

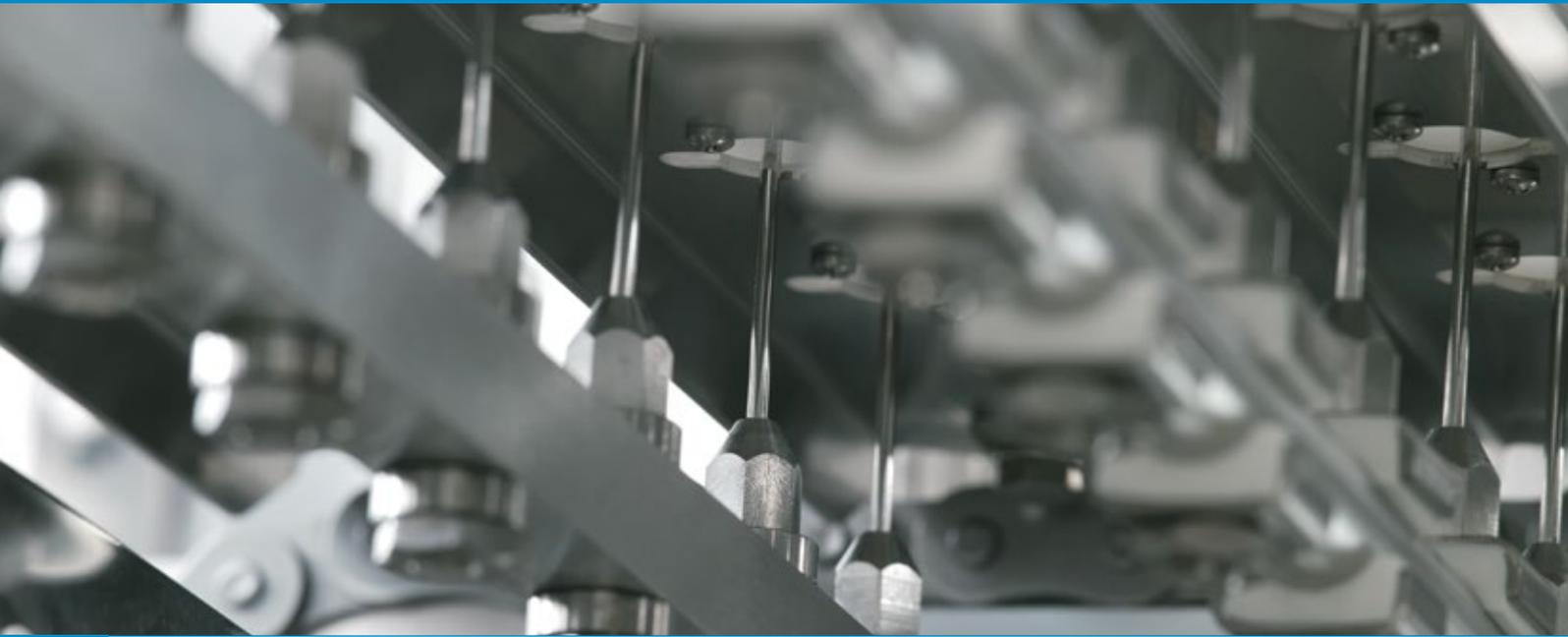


## STANDARD WASHING CYCLE

The standard washing cycle can be designed according to the containers to be washed and the customer's needs. A 3-log endotoxin reduction can be achieved for terminal sterilisation applications.



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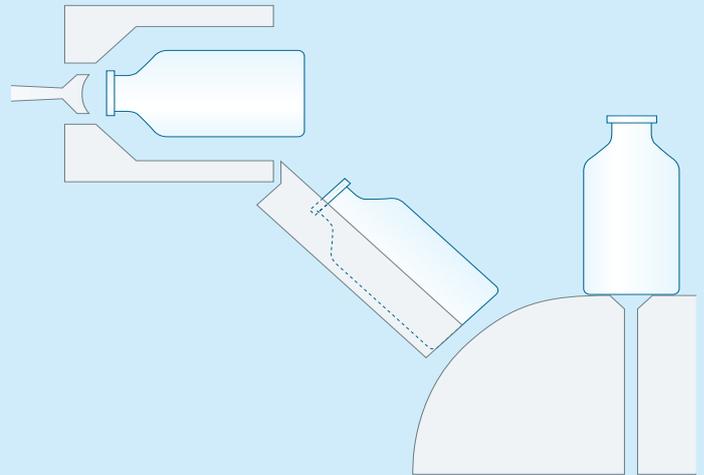


The container feeding area, with or without an ultrasonic bath, is fitted with a conveyor made of plastic materials (FDA approved). Thanks to the simple design of the feeding group, no adjustments are required and a tool-free changeover is possible.



Gentle movement with overload devices limit the mechanical forces exerted on the containers. Very small containers can be automatically rejected in case of falling during their transport.

VACUUM-ASSISTED POSITIVE UNLOADING FOR UNSTABLE SMALL CONTAINERS OR IN CASE OF HIGH SPEEDS.

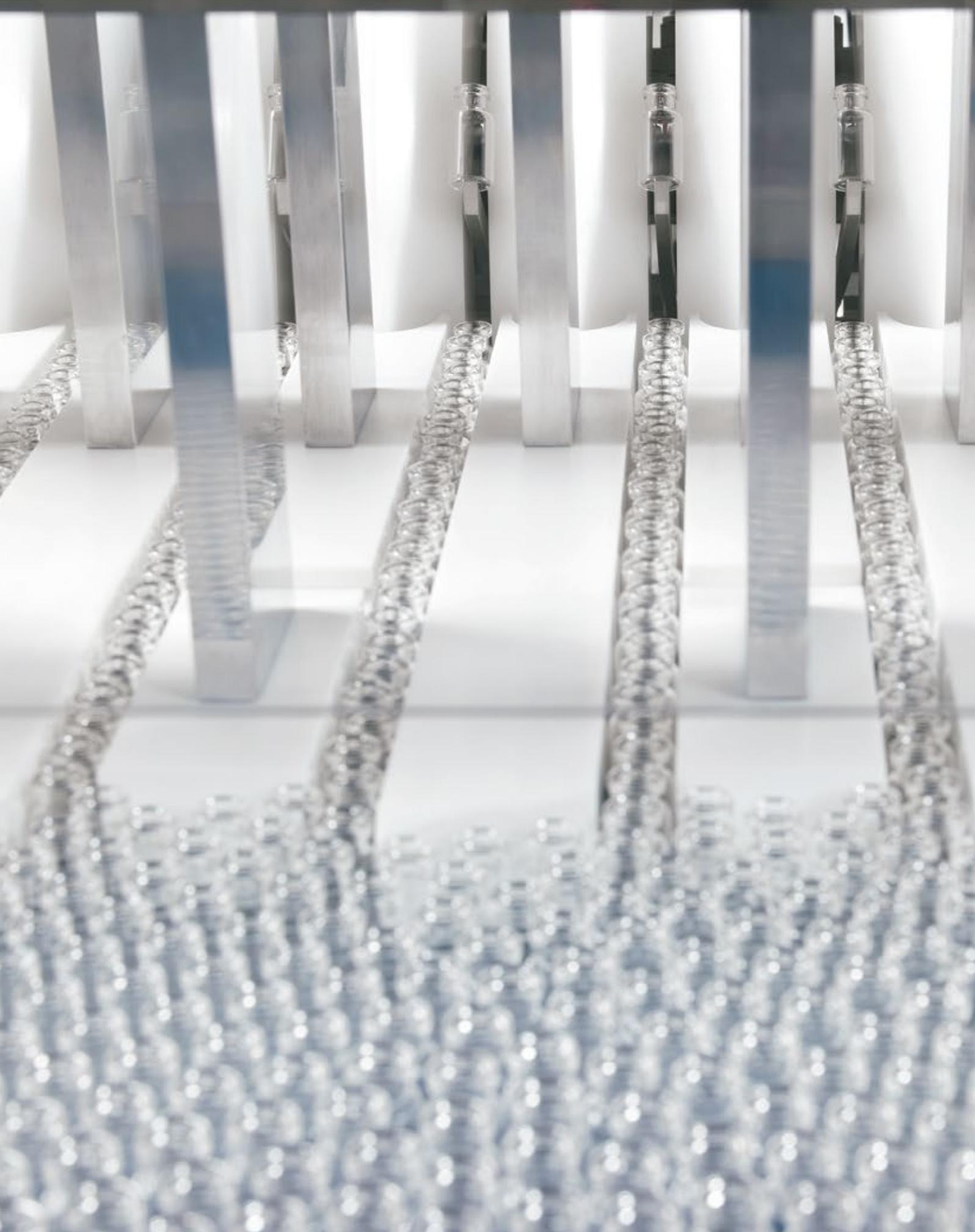


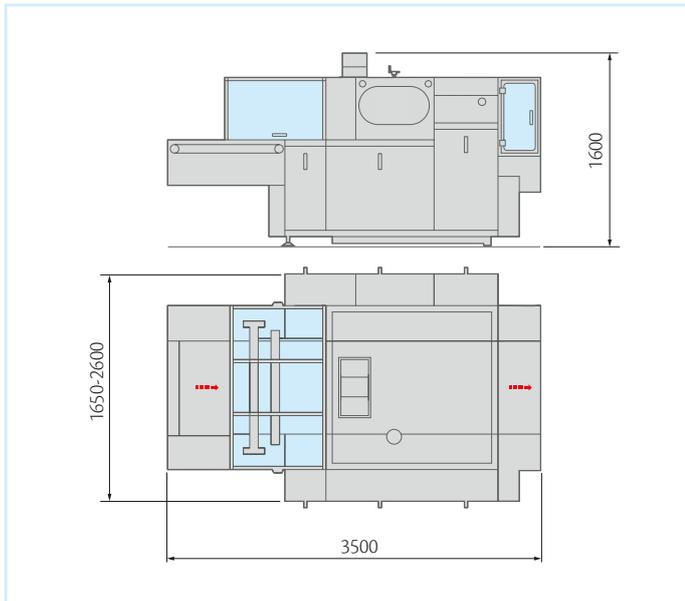
The positive unloading system prevents water dripping into the vials. The machine is emptied by an automatic discharge system, which guides the containers inside the depyrogenating tunnel without the need for tools or operator intervention.



The ultrasonic bath unit for containers can be fitted on all Hydra models. This unit's smart design enables easy access, straightforward maintenance and quick changeover without any need of adjustments.

**HYDRA** TECHNICAL DATA





HYDRA	1000	1300	1500	1800	2000
Length (mm)	3,500				
Width (mm)	1,650	1,950	2,150	2,400	2,600
Height (mm)	1,600				

SIZE RANGE			TYPICAL BASKET	NUMBER OF BASKETS PER ROW	MACHINE MODEL	PRODUCTION (PIECES/HOUR)
Min.	Max.					
7 mm	110 mm	14-25 mm	A	9	Hydra 1000 9 A	10,800
				17	Hydra 1300 17 A	20,400
				21	Hydra 1500 21 A	25,200
				29	Hydra 1800 29 A	34,800
				33	Hydra 2000 33 A	39,600
7 mm	110 mm	16-36 mm	B	7	Hydra 1000 7 B	8,400
				13	Hydra 1300 13 B	15,600
				17	Hydra 1500 17 B	20,400
				23	Hydra 1800 23 B	27,600
10 mm	110 mm	20-52 mm	C	6	Hydra 1000 6 C	7,200
				10	Hydra 1300 10 C	12,000
				13	Hydra 1500 13 C	15,600
				18	Hydra 1800 18 C	21,600
				21	Hydra 2000 21 C-S	25,200
10 mm	180 mm	32-66 mm	D	5	Hydra 1000 5 D	4,500
				8	Hydra 1300 8 D	7,200
				10	Hydra 1500 10 D	9,000
				14	Hydra 1800 14 D	12,600
10 mm	180 mm	50-80 mm	I	4	Hydra 1000 4 I	3,600
				7	Hydra 1300 7 I	6,300
				9	Hydra 1500 9 I	8,100
				11	Hydra 1800 11 I	9,900

Production data and size ranges refer to standard machines with a single size of washing baskets. Additional container sizes can be processed by replacing the baskets.

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