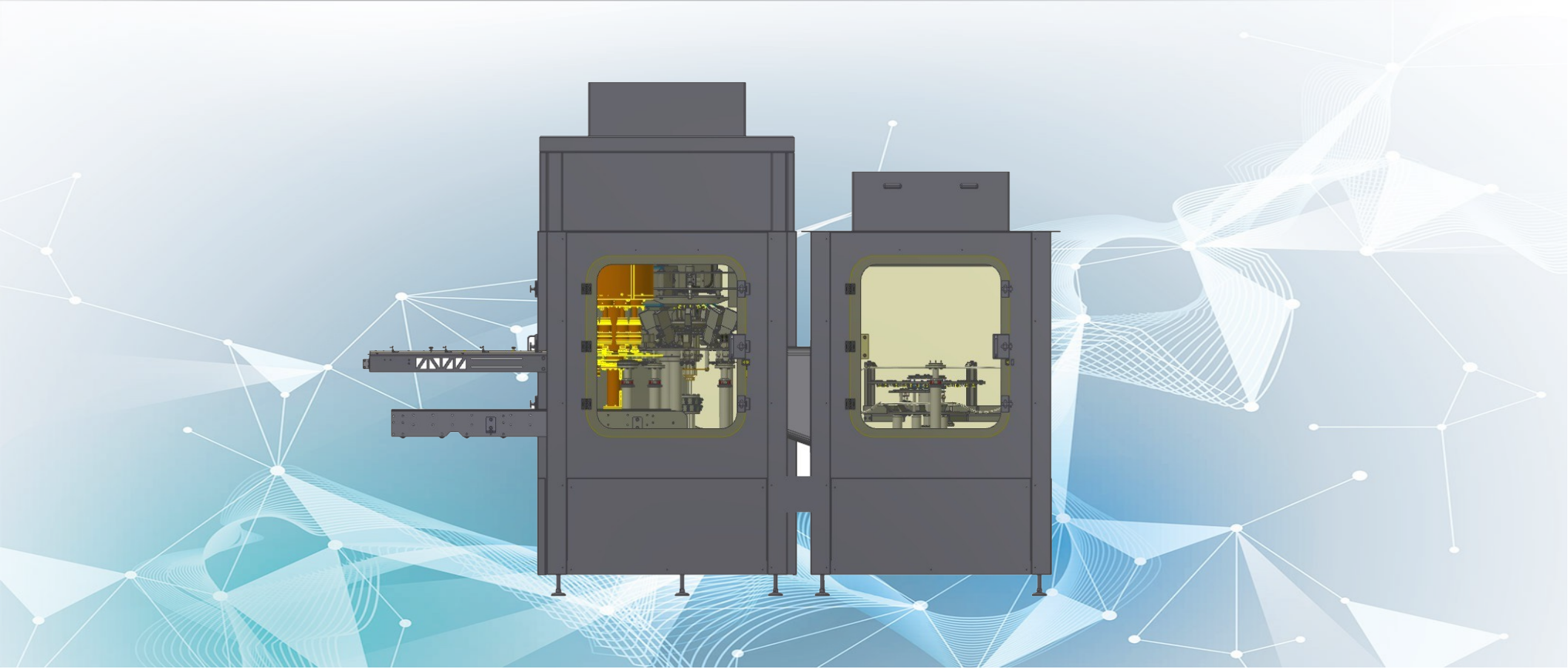


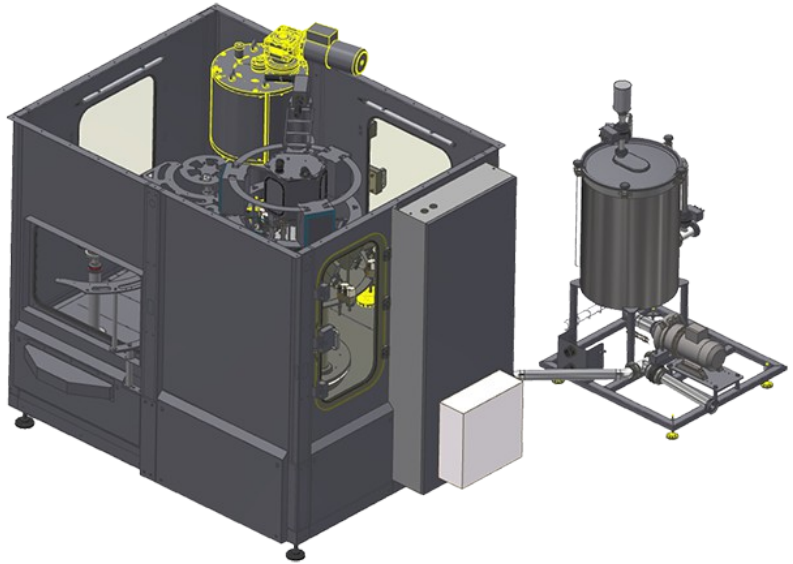
HEVF

Hyperclean Electronic Volumetric filling System for Flat products

HEVF: innovation for the customer

The thirty-year experience of *Enoberg* in the construction of filling machines and the increased need of the market in terms of hygiene, reliability, easy use and maintenance of the machines led the company to renew the existing EVF series with the realization of the new *HEVF series.*

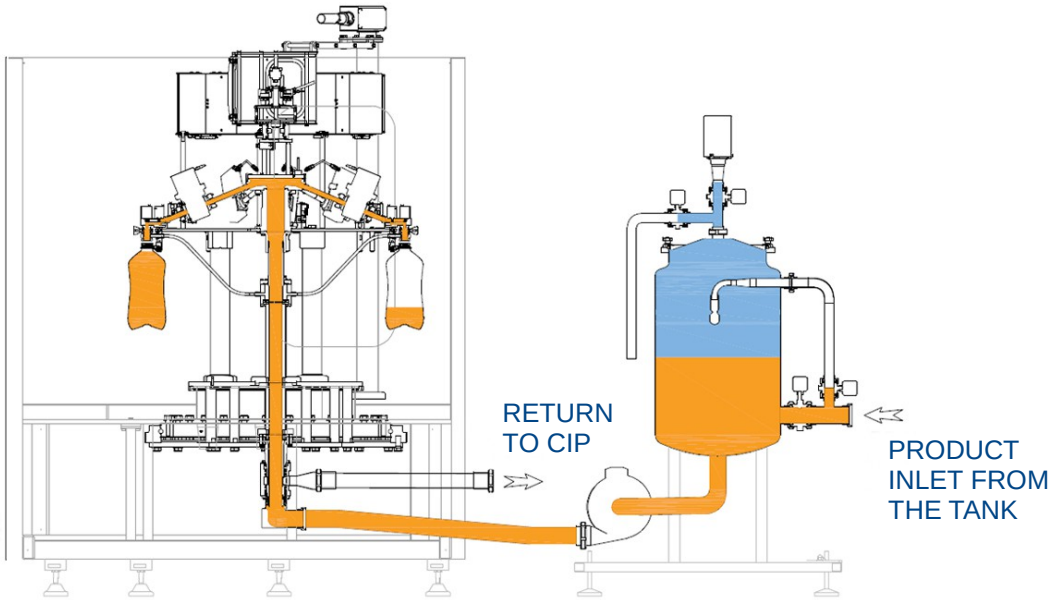
HEVF: Hyperclean Electronic Volumetric filling systems for Flat products.



HEVF: how does it work?

The *electronic volumetric filling system* is based on the use of a flow-meter for each filling valve.

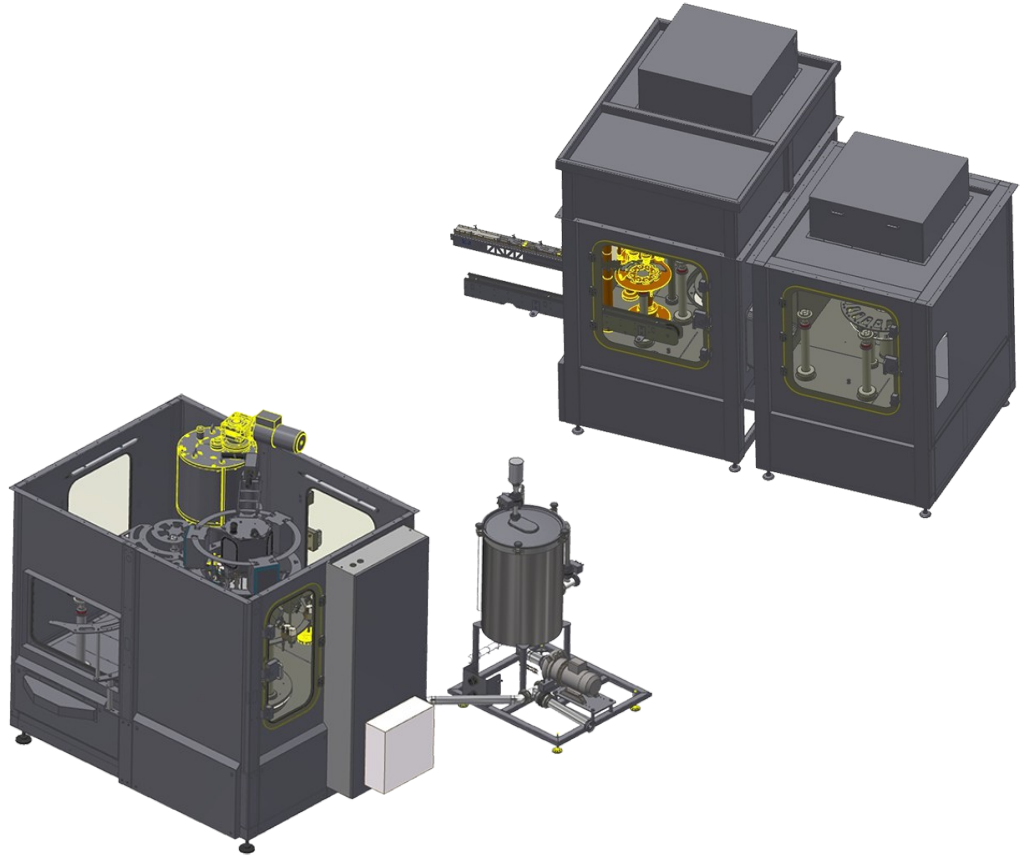
The flow meter detects the product flow that is entered in each bottle; when the *correct volume* is reached, the flow meter controls the *closing of the filling valve*.



HEVF: available configurations

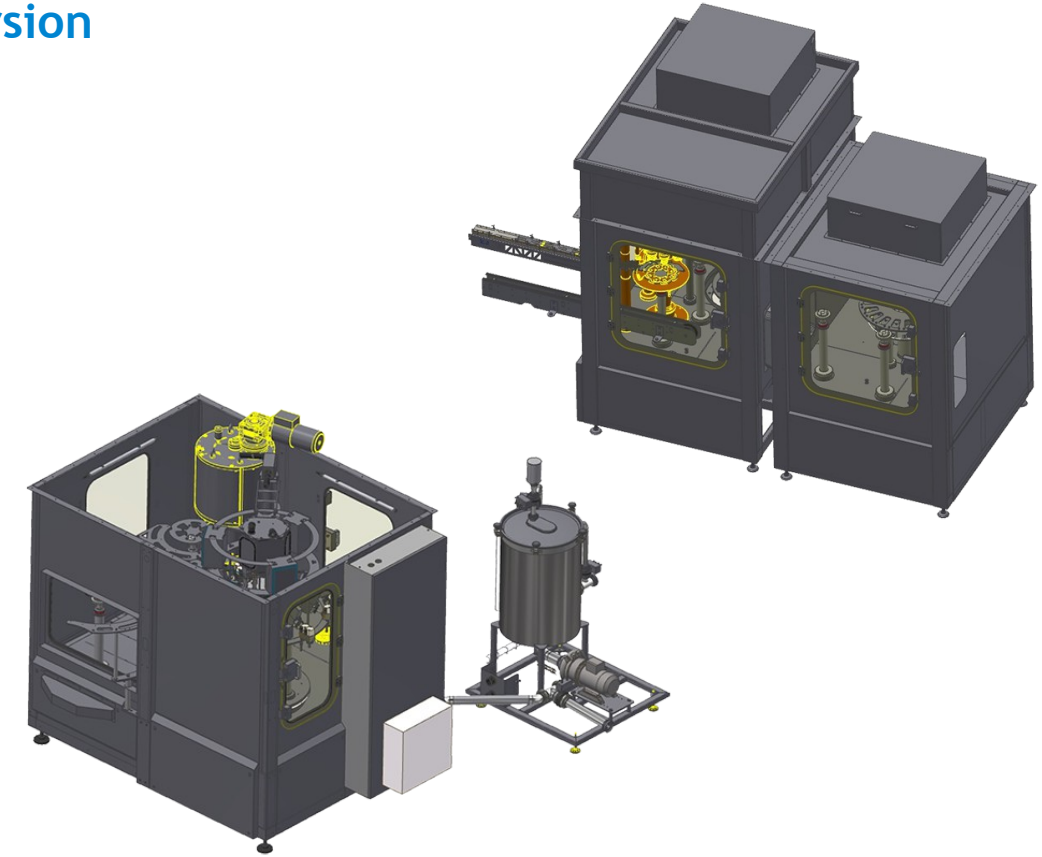
The machine is available in the following versions:

- FILLER - CAPPER;
- RINSER (with product or air) – FILLER - CAPPER;
- *ECOBLOC*®: BLOWMOULDER – FILLER - CAPPER.



HEVF: available configurations – HC version

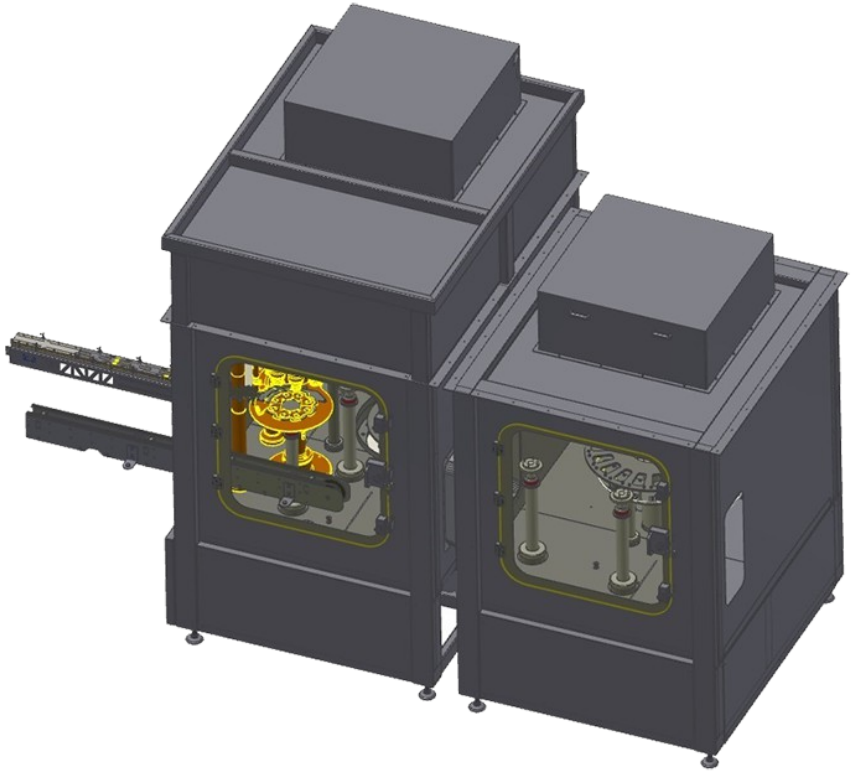
- Each configuration is available both in the standard version and in the *HC (High-Capacity)* version for bottles up to 10 lt. The HC PLUS version is also available, able to fill one-way PET bottles up to 5 gallons (19 liters).



HEVF: machine dimensions

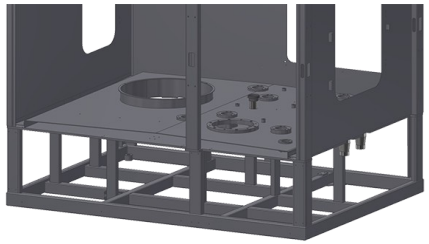
The frame of the new HEVF is realized with reduced dimension. Advantages of the solutions:

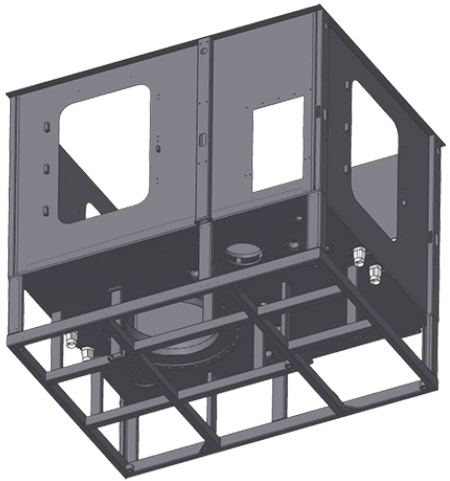
- *space saving* for machien positioning in the plant;
- possibility of transporting the machine inside *40' high cube container* (availabe for most models).

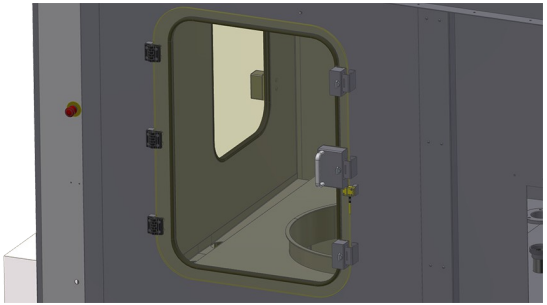


HEVF: the frame

- Frame made of *AISI 3040* stainless steel;
- fully welded frame which fives the entire machine a solid and resistant structure;
- the filling chamber is *completely isolated* from the transimissions, which therefore do not come into contact with any type of liquid;
- tempered glass protections and sealing gaskets *hermetically seal the filling environment* from the external environment.



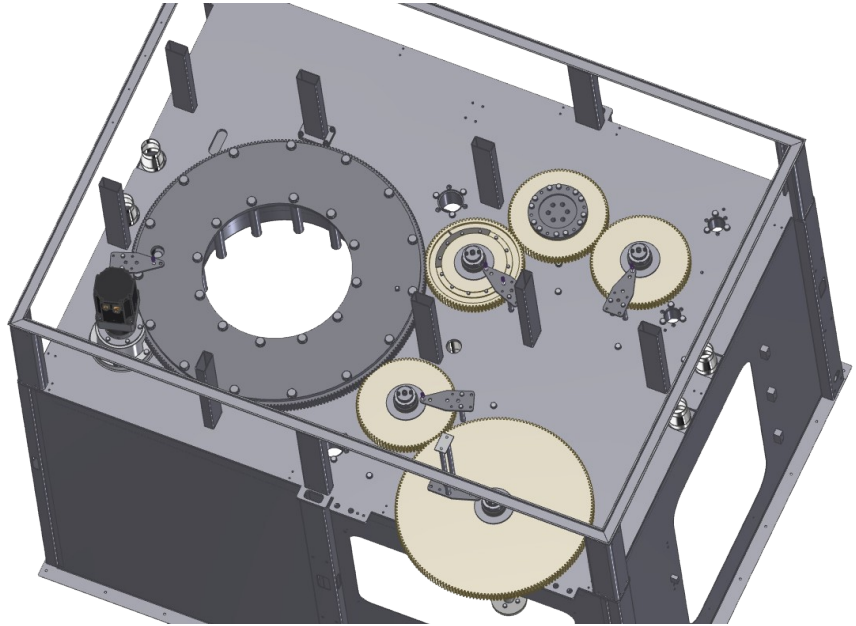




HEVF: motion transmission

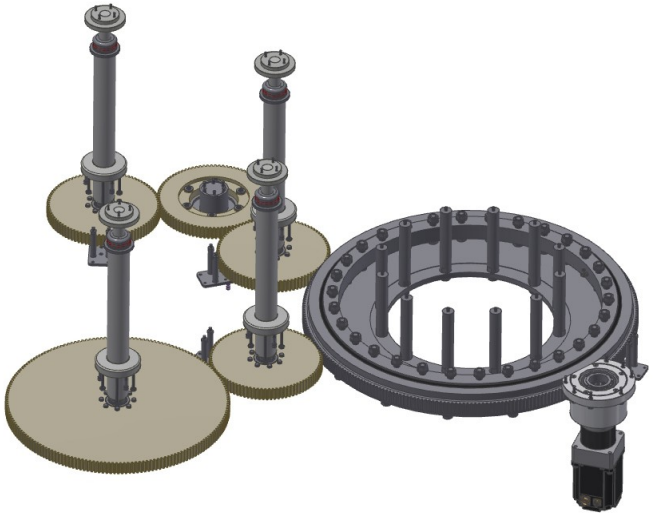
The movement of the carousels of the machine is obtained with *robust gears* positioned in the base of the machine. A gear placed in the base of the machine corresponds to each *star-wheel* placed in the filling environment. The gears are moved by a single *brushless motor* managed by the machine program.

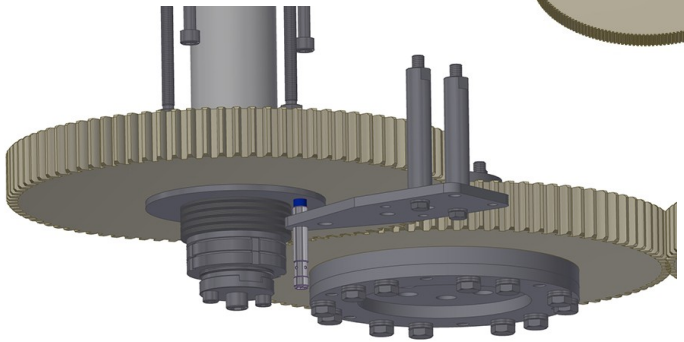
The *filling carousel* is moved thanks to a *toothed fifth wheel* having the same primitive diameter as the *filling carousel*.



HEVF: motion transmission

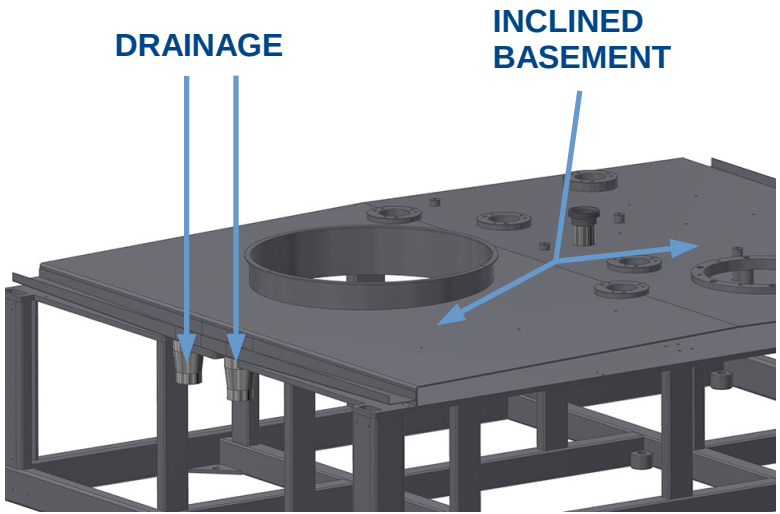
- The synchronism between all the *star-wheels* is guaranteed by the *toothed wheels* having the same diameter as the corresponding handling carousel in the working environment;
- each transmission shaft is equipped with a *mechanical emergency clutch*.

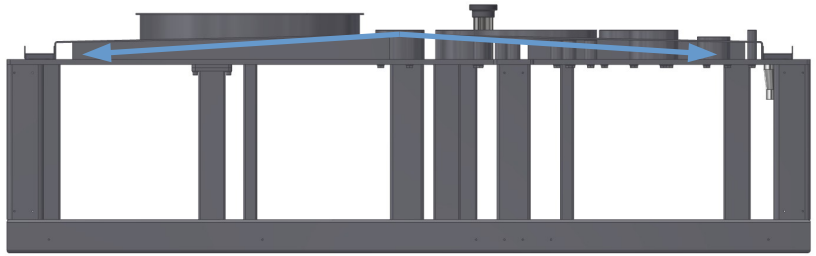




HEVF - filling environment: inclined base plate

The basement of the machine is inclined towards the *drainage points of the machine*.





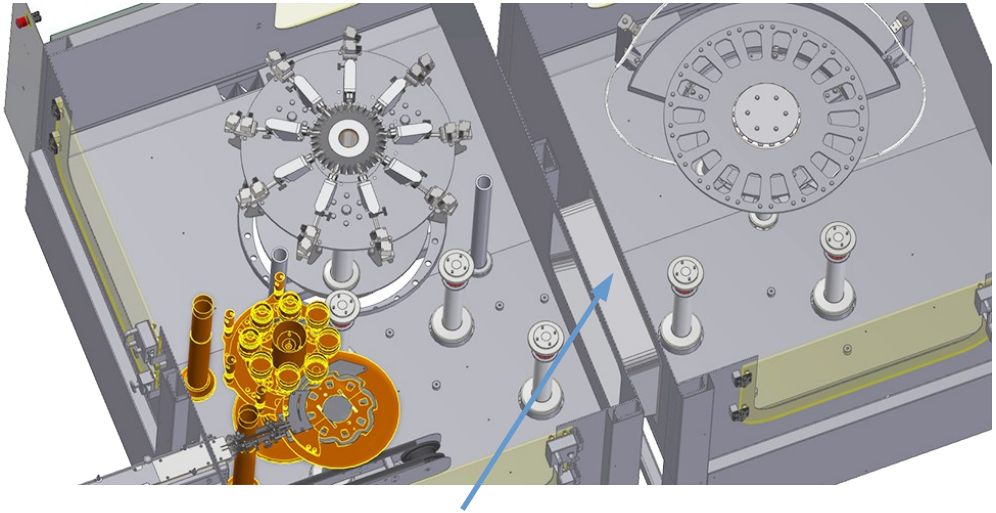
Advantages of the solution:

- *drainage of liquids* present on the machine basement;
- higher level of hygiene.

HEVF - filling environment: separation between modules

The *filling/capping module* is kept separate from the rinsing environment. The two parts are connected through a tunnel that allows the bottles passage.Advantages of the solution:

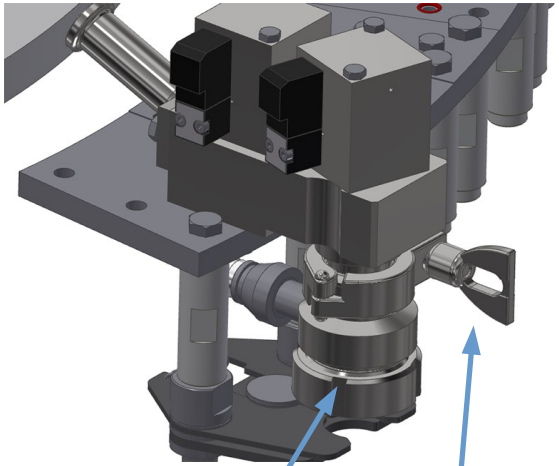
- reduced *risk of contamination* between environments;
- easy positioning = reduced installation times.

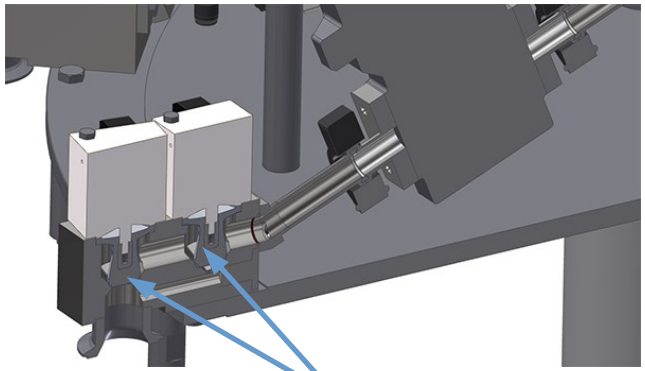


CONNECTING TUNNEL BETWEEN THE MODULES

HEVF: filling valve

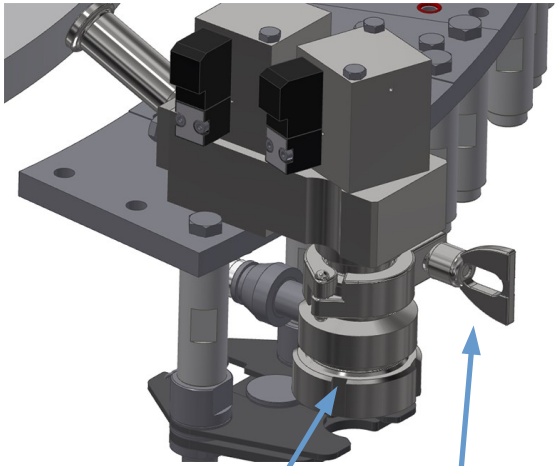
- Filling valve with reduced number of gaskets: *two aseptic membranes* regulate the flow of the filling product;
- completely sanificable filling valve, thanks to dummy bottles with manual or automatic positioning (optional);
- terminal connected to the valve by pharmaceutical clamp.





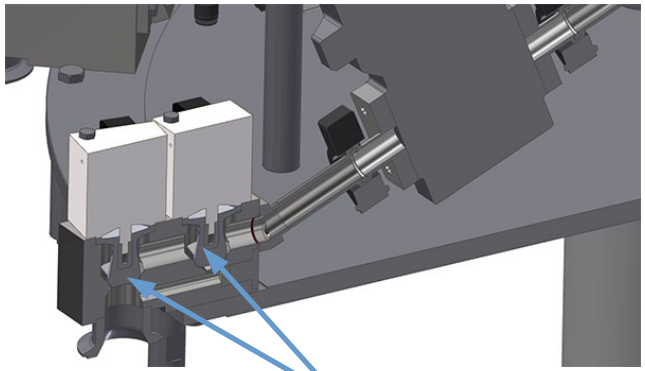
HEVF: filling valve – HC series

- The HC series filling valve has the same design of the standard valve. The difference is only in the *passage inside the flow meter, in the passage inside the filling valve and in the valve terminal* which is enlarged to allow an higher filling speed.



VALVE TERMINAL

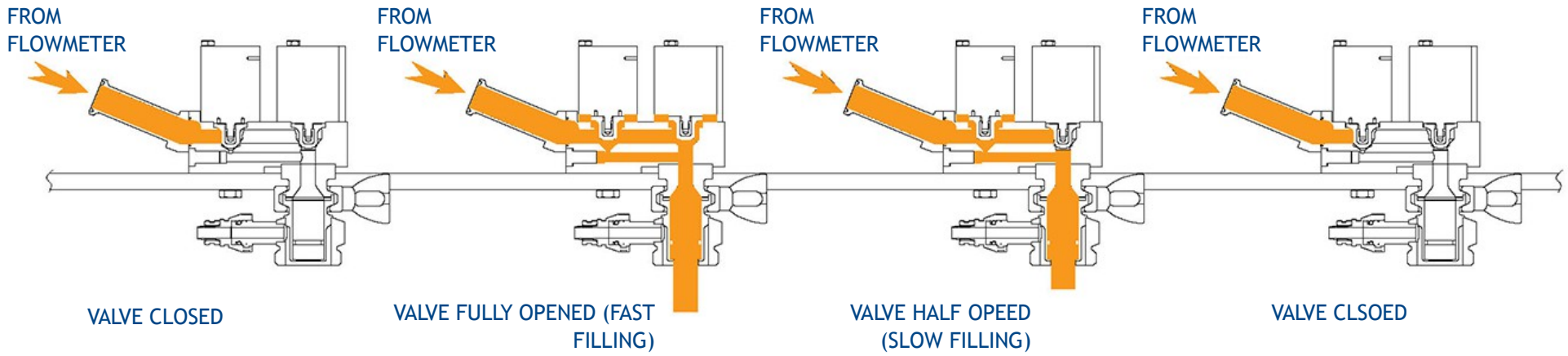
PHARMACEUTICAL CLAMP



ASCEPTIC FILLING MEMBRANE'S

HEVF: filling phase

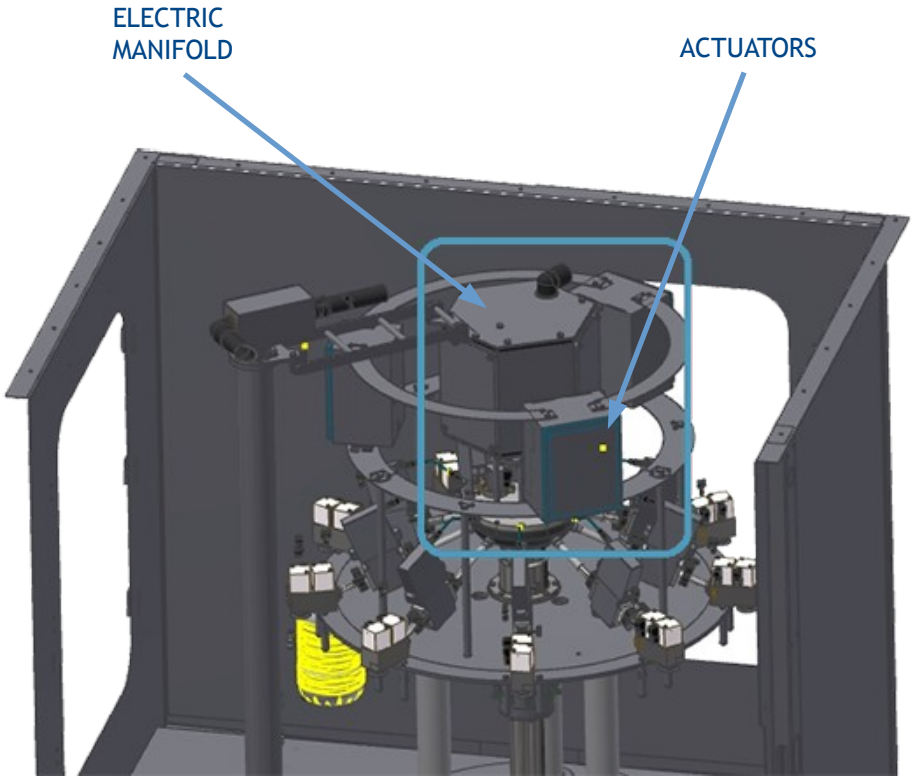
- The valve allows to manage *two filling speeds* in order fo till in a homogeneous way, efficiently and without product leakage from the bottle;
- the duration of the filling cycles *(slow or fast)* can be easily and intuitively managed using the recipes present in the man-machine interface *(Posyc HMI);*



HEVF: electric mainfold and fillbox

The *electric manifold* and the actuators of the filling valves are isolated from the filling environment by airlocks. Advantages:

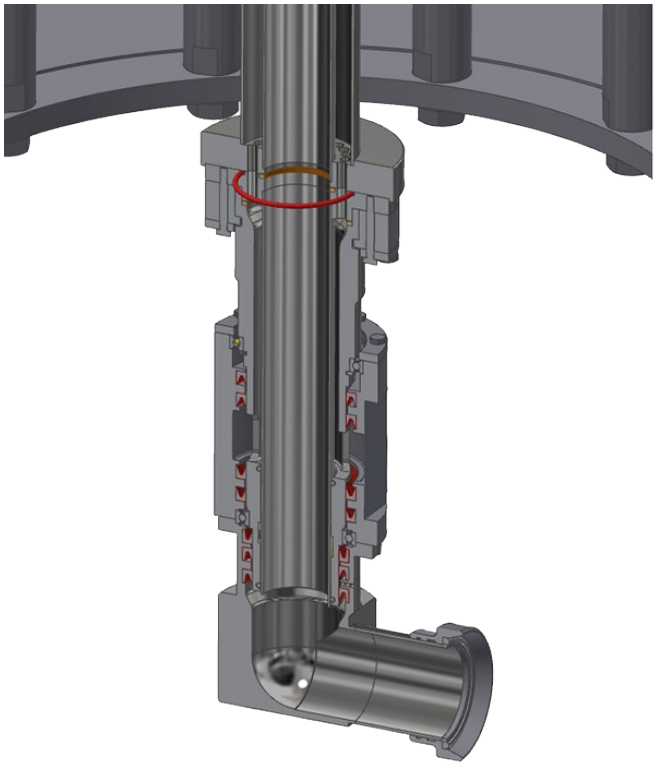
- safeguarding of electronic components from any contact with liquids;
- possibility of carrying out COP washing operations of the entire filling carousel.



HEVF: product and cleaning collectors

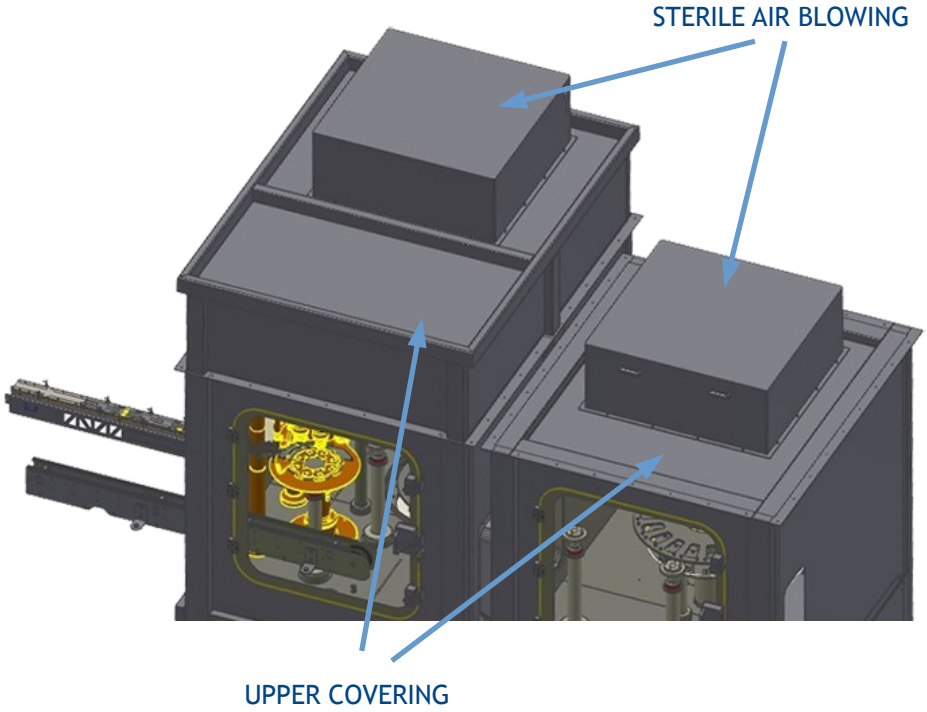
The entry of the filling product take place in the lower part of the machine through a *ceramic coated manifold* equipped with double gaskets (one for sealing, one for safety) and complete with inspection light. Advantages of the solution:

- net separation between "wet" manifolds (product) and "dry" manifolds (electric and pneumatic);
- high durability (double seals and ceramic coated manifold).



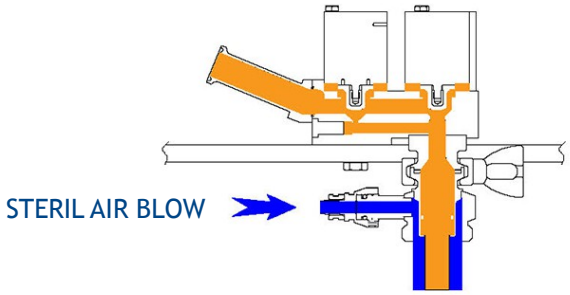
HEVF: optionals

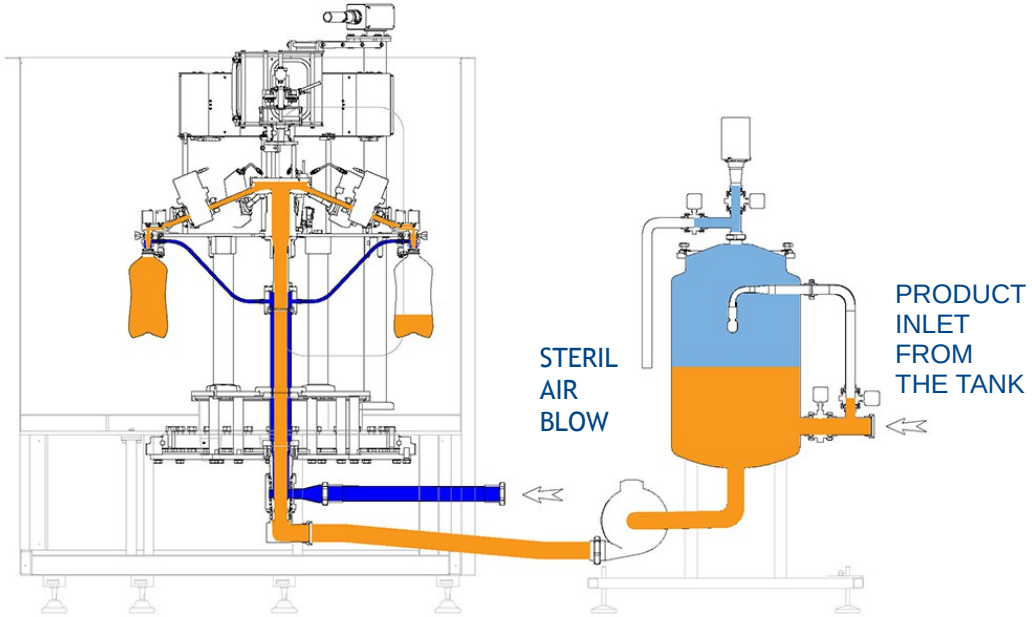
- *Upper covering* to completely isolate the machine from the external environment;
- sterile air blowing group to create *over-pressure* within the work environment;
- realization in *AISI 316* of all parts in contact with the product;
- various possibilities to *sanitize the cap* before the capping phase (UV lamp, ionizer + aspirator, ozonized water).



HEVF: optionals - sterile air blowing from the filling valve

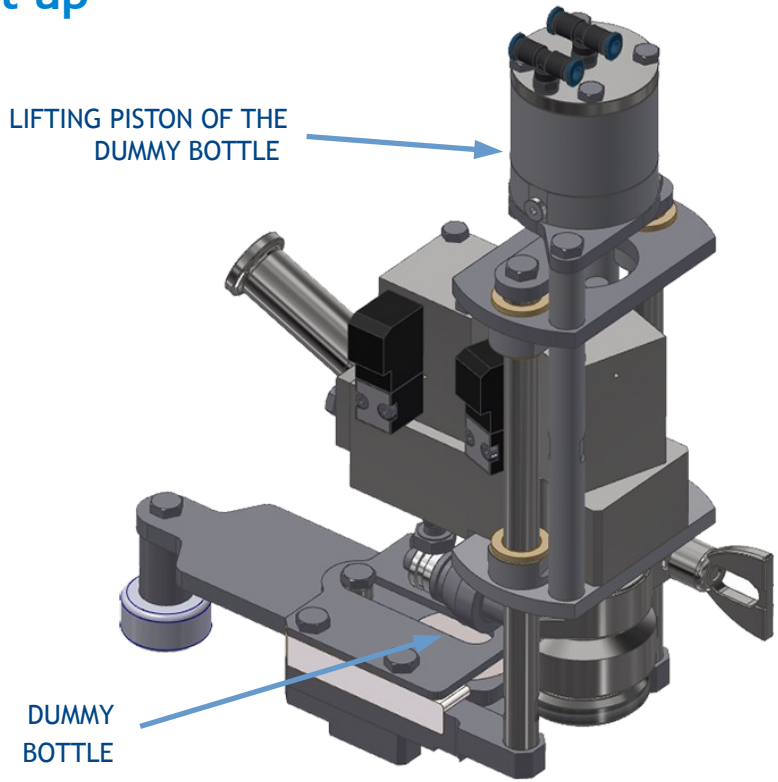
- Sterile air blowing system (always active) which creates a *cone of air between the filling valve and the bottle*, to protect the product of the single bottle during filling.;
- it is obtained by blowing sterile air into the CIP return pipe, which is not used during the filling phases.



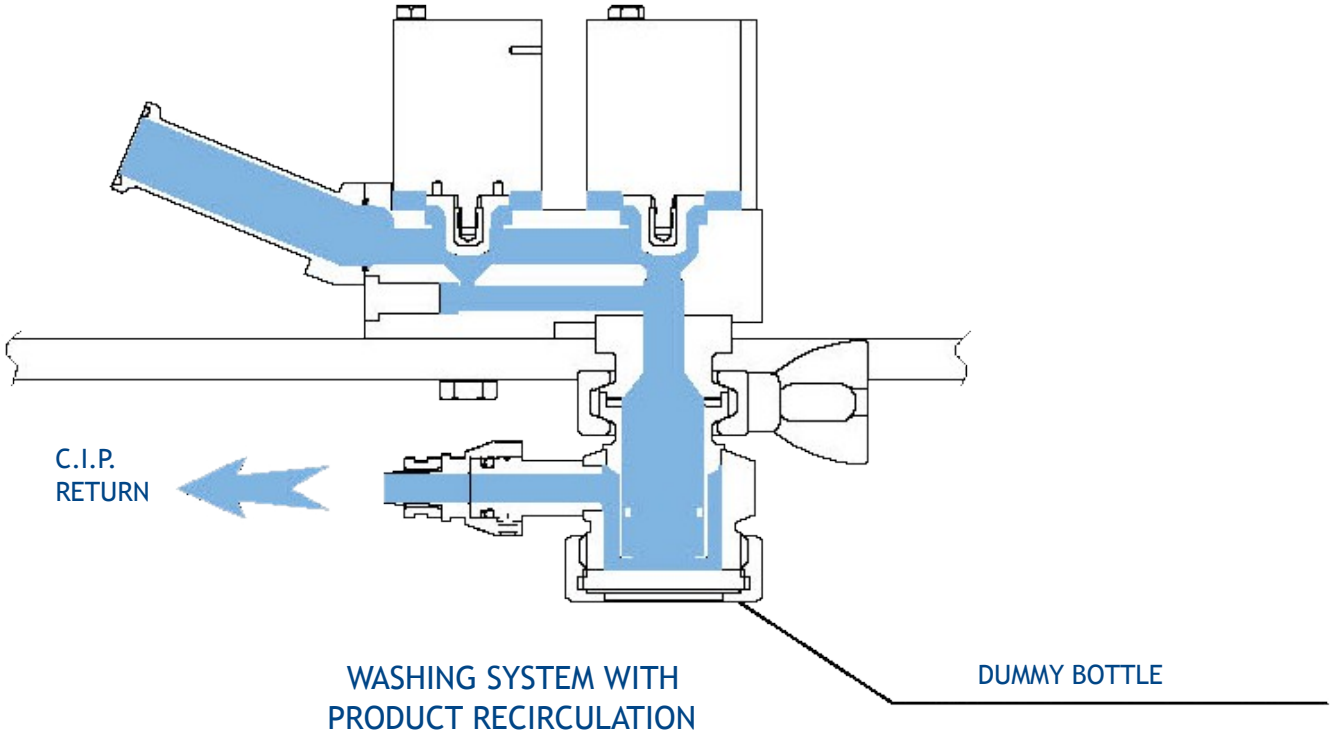


HEVF: optionals - dummy bottle with automatic set up

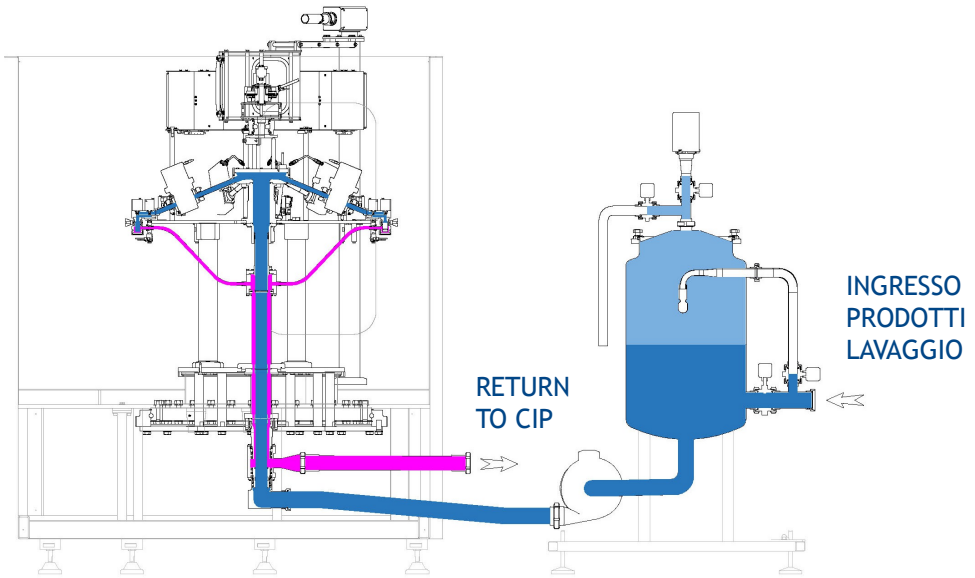
- Possibility of automatic positioning of the dummy bottles operated via HMI. Advantages:
  - *reduction of machine preparation times for the CIP*, especially for machines with a high number of filling valves;
  - *greater hygiene:* it avoids contact between the operator's hands and valve + dummy bottle during the preparation of the machine for the CIP.

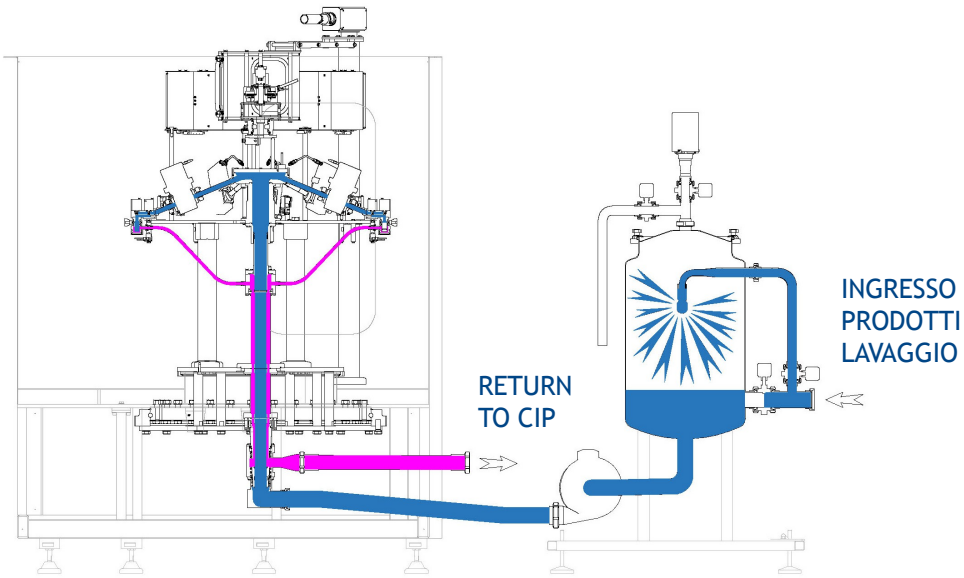


HEVF: CIP sanitation



HEVF: CIP sanitation

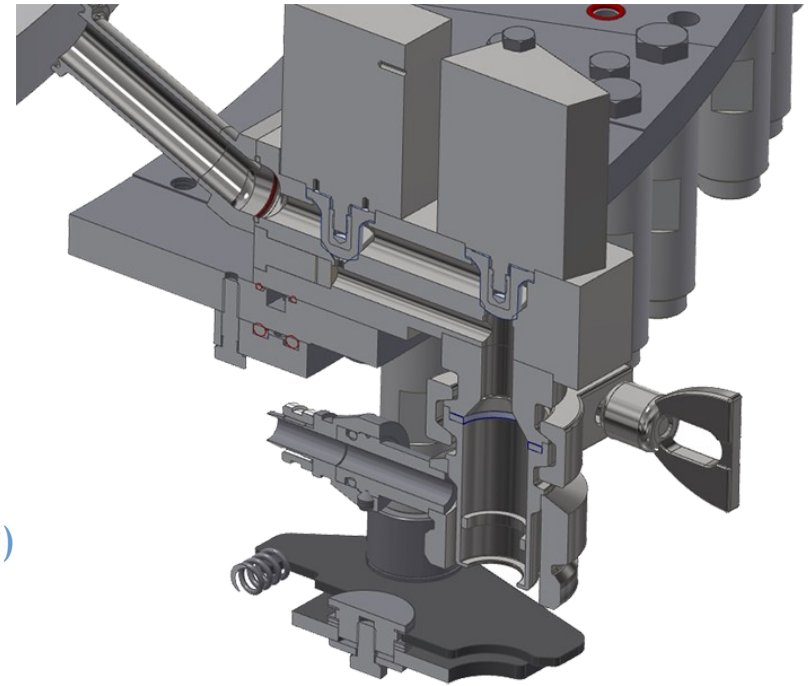




HEVF: fillable products

The filling valve, the same for all the products, is completed with a dedicated valve terminal for each type of filling product ,in order to make the filling optimal. The products that can be filled with the HEVF machine are:

- foamy liquid detergent
- flat water and ozonized water
- cold tea
- limpid juice (e.g. pineapple)
- fresh milk (7 days shelf life)
- wine vinegar and balsamic vinegar
- apple vinegar
- thick juice (e.g. pear)
- syrups
- soy sauce
- laundry and dish detergent



HEVF: filling speed

Maximal speed (bph) on the machine HEVF 96 filling valves	
Flat water	43.200 (0,5 lt) - 38.200 (1,5 lt)
Juices	43.200 (0,5 lt) - 34.400 (1 lt)
Fresh milk	43.200 (0,5 lt) - 33.500 (1 lt)
Syrup	43.200 (0,5 lt) - 30.800 (1 lt)
Vinegar	43.200 (0,5 lt) - 37.400 (1 lt)
Detergents	43.200 (0,75 lt) - 22.200 (2 lt)

HEVF: filling speed - HC series

Maximal speed (bph) on the machine HEVF - HC 20 filling valves	
Flat water	8.100 (5 lt) - 5.600 (10 lt)

Thank you for your attention

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