

HEVS

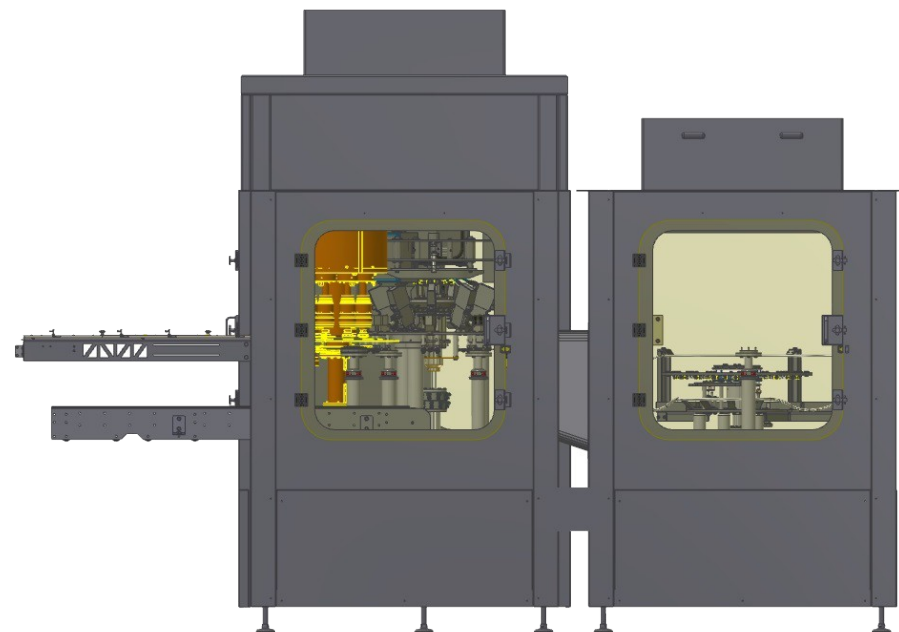
Hyperclean Electronic Volumetric filling System for Sparkling products



HEVS: 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 the realization of the new *HEVS series*.

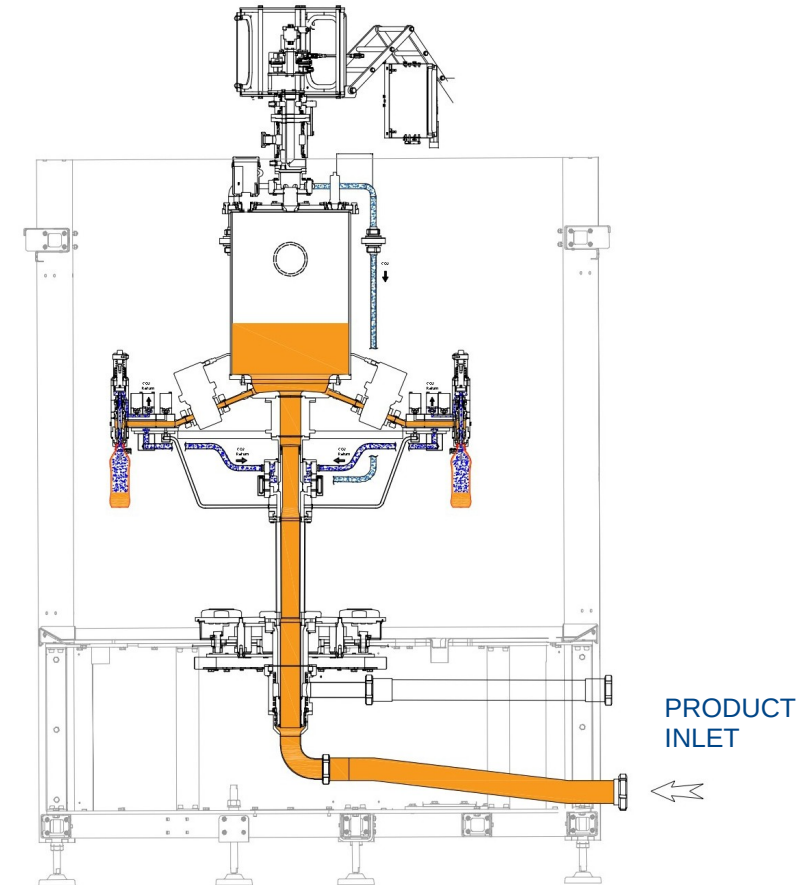
HEVS: Hyperclean Electronic Volumetric filling systems for Sparkling products.



HEVS: how does it work?

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

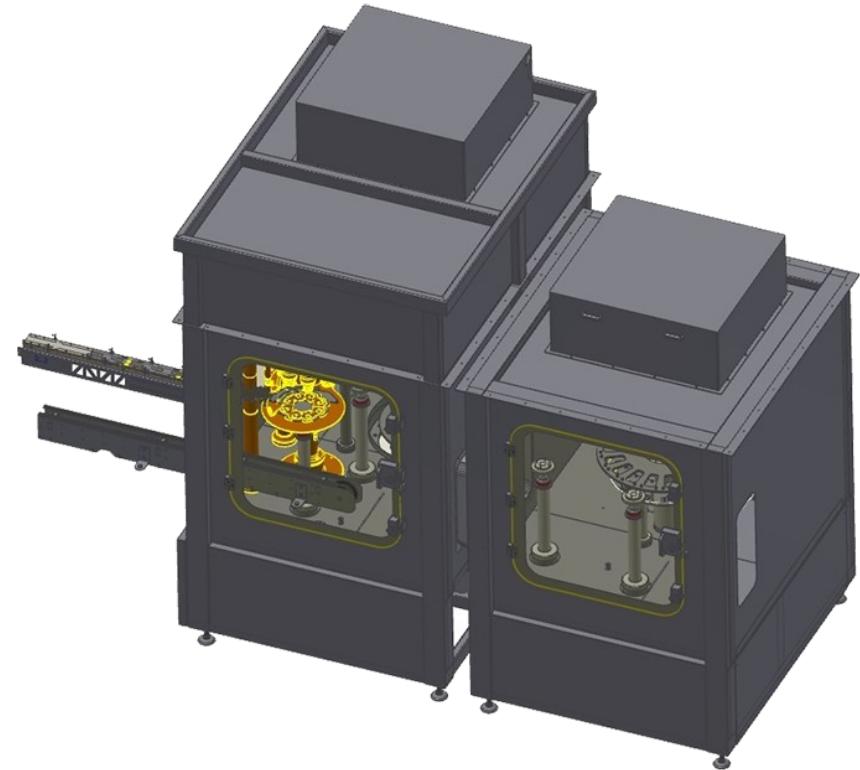
The flow meter detects the product flow that is entered in each bottle; when the *correct volume* is reached, the flow meter controls the *closing of the filling valve*.



HEVS: available configurations

The machine is available in the following versions:

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



HEVS: machine dimensions

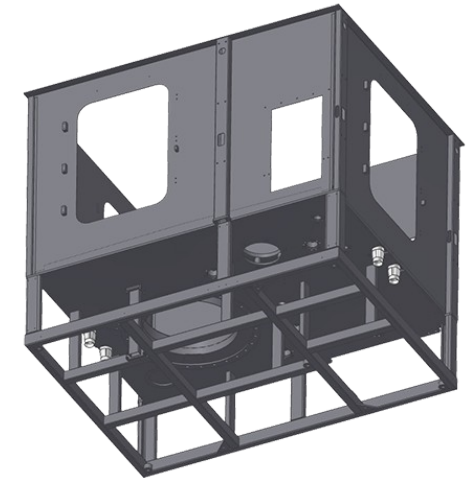
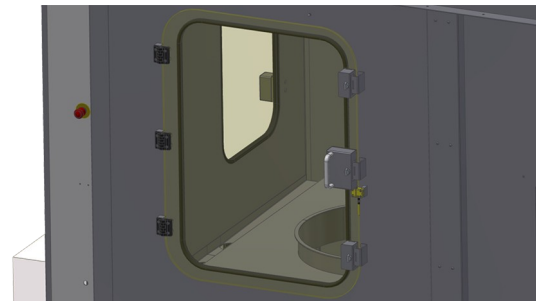
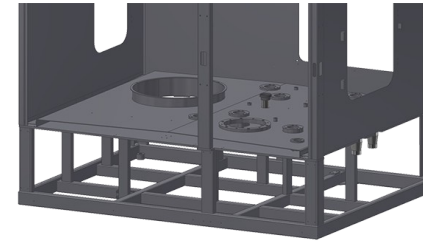
The frame of the new HEVS is realized with reduced dimension. Advantages of the solutions:

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



HEVS: the frame

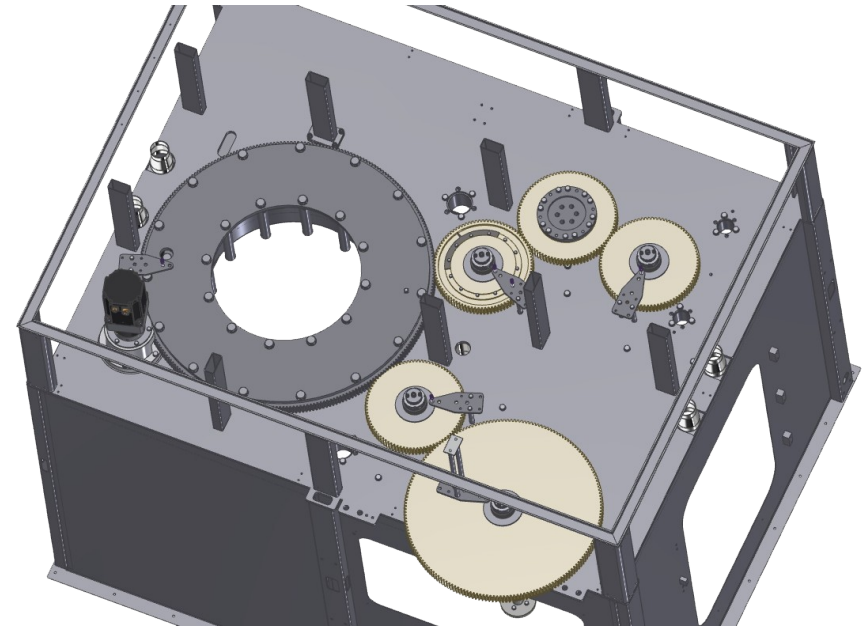
- ▶ Frame made of *AISI 3040* stainless steel;
- ▶ fully welded frame which gives the entire machine a solid and resistant structure;
- ▶ the filling chamber is *completely isolated* from the transimissions, which therefore do not come into contact with any type of liquid;
- ▶ tempered glass protections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



HEVS: motion transmission

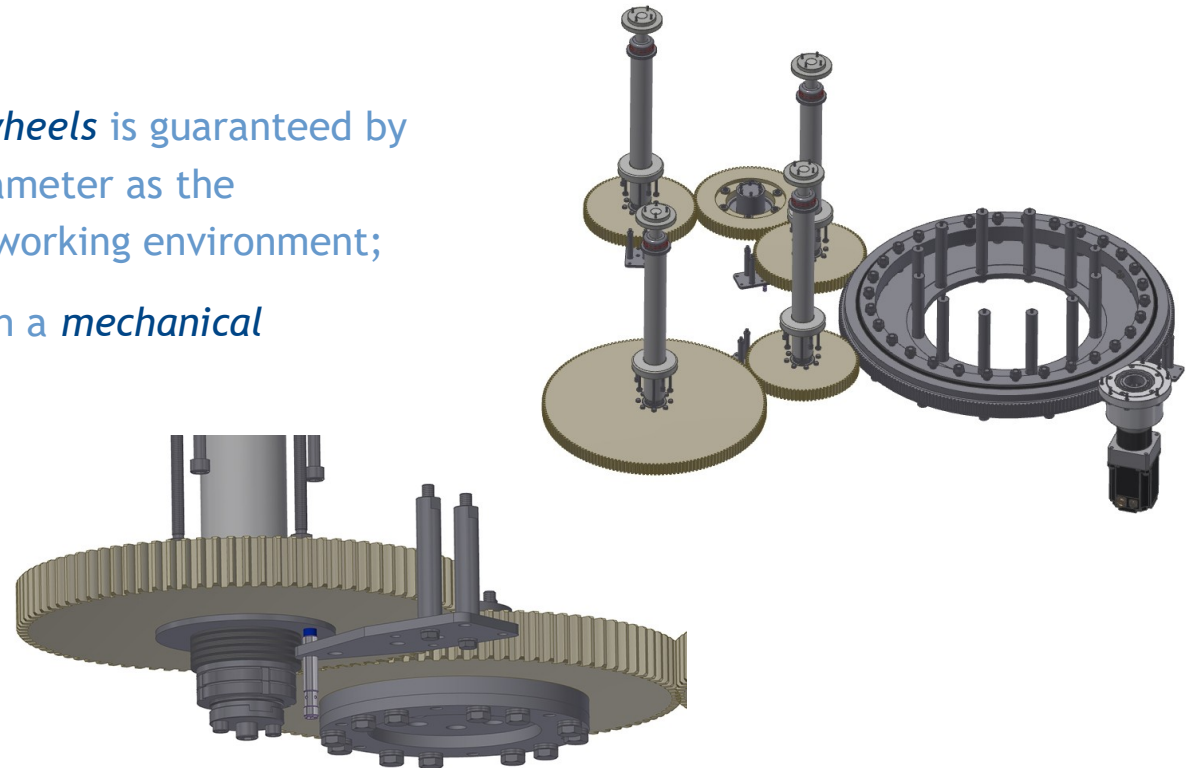
The movement of the carousels of the machine is obtained with *robust gears* positioned in the base of the machine. A gear placed in the base of the machine corresponds to each *star-wheel* placed in the filling environment. The gears are moved by a single *brushless motor* managed by the machine program.

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



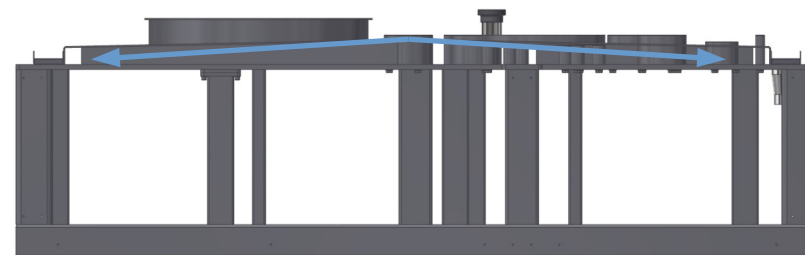
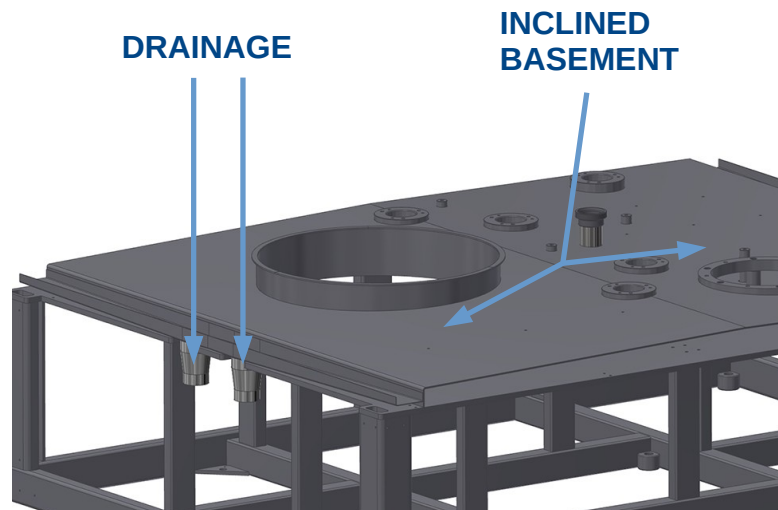
HEVS: motion transmission

- ▶ 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*.



HEVS - filling environment: inclined base plate

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



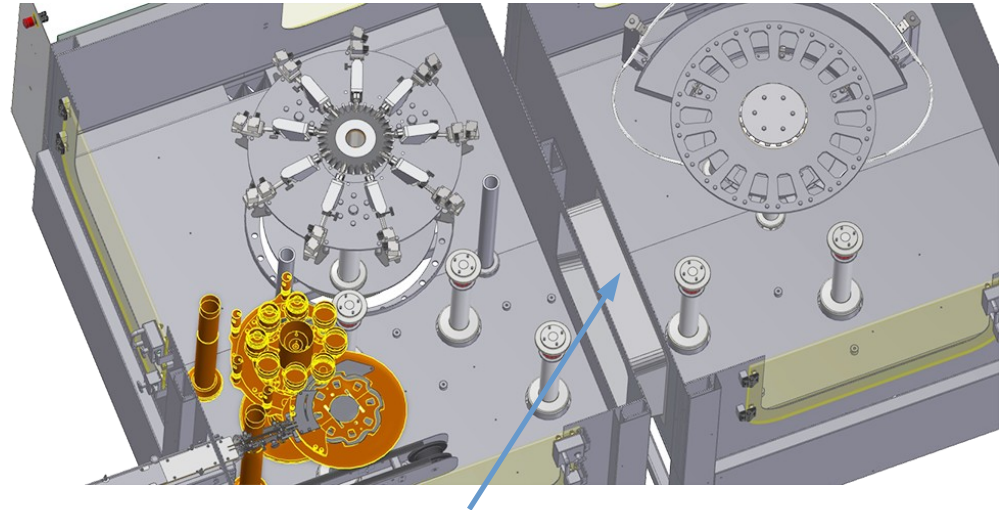
Advantages of the solution:

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

HEVS - 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

HEVS: filling valve

- ▶ *High technological design of the filling valve with independent flow of CO2 inside the bottle;*
- ▶ *dedicated sniff/decompression channel collect in a single chamber from all the filling valves;*
- ▶ *terminal part of the filling valve that allow to deflect the product on the side of the bottle **reducing in this way product turbulence while filling;***
- ▶ *manage of the filling steps thanks to recipe memorized in the machine program, easy to recall on the HMI;*



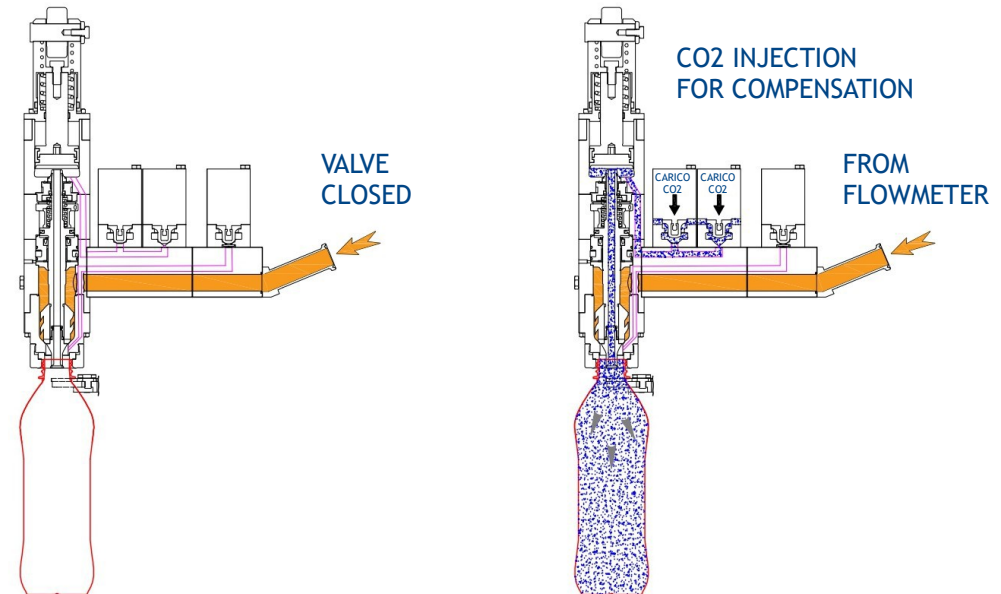
HEVS: filling valve

- ▶ filling valves completely build in *S/S 316*;
- ▶ automatic dummy bottle, available as standard, always installed on the filling valve that allow the *complete sanification of the filling valve*;
- ▶ the lifting piston is integrated in the filling valve. The position above the filling valve allow an easy maintenance and *avoid accidental contact with the filling product*.



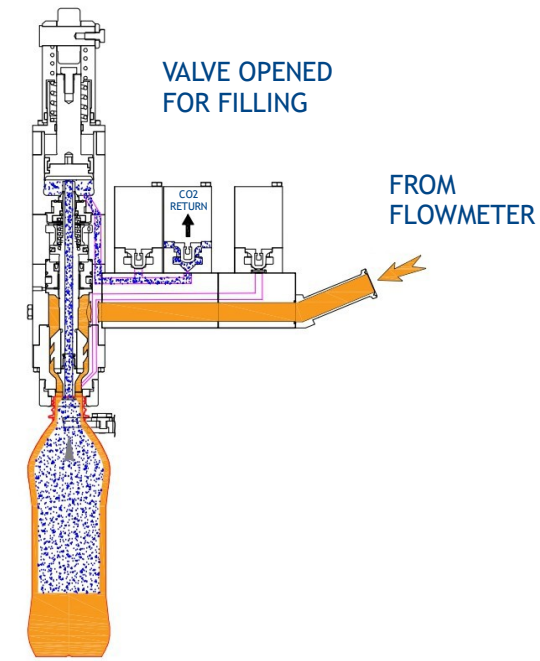
HEVS: filling phase

- ▶ the bottle is hold on the neck by the fork directly installed on the filling valve;
- ▶ the piston, integrated in the valve, allow to lift *up the bottle* that is sealed with the filling valve;
- ▶ the CO₂ flow inside the bottle that reach *the same pressure as the one in the filling tank (isobaric filling) and in a dedicated chamber inside the valve* (that allow to keep the bottle in the proper position);



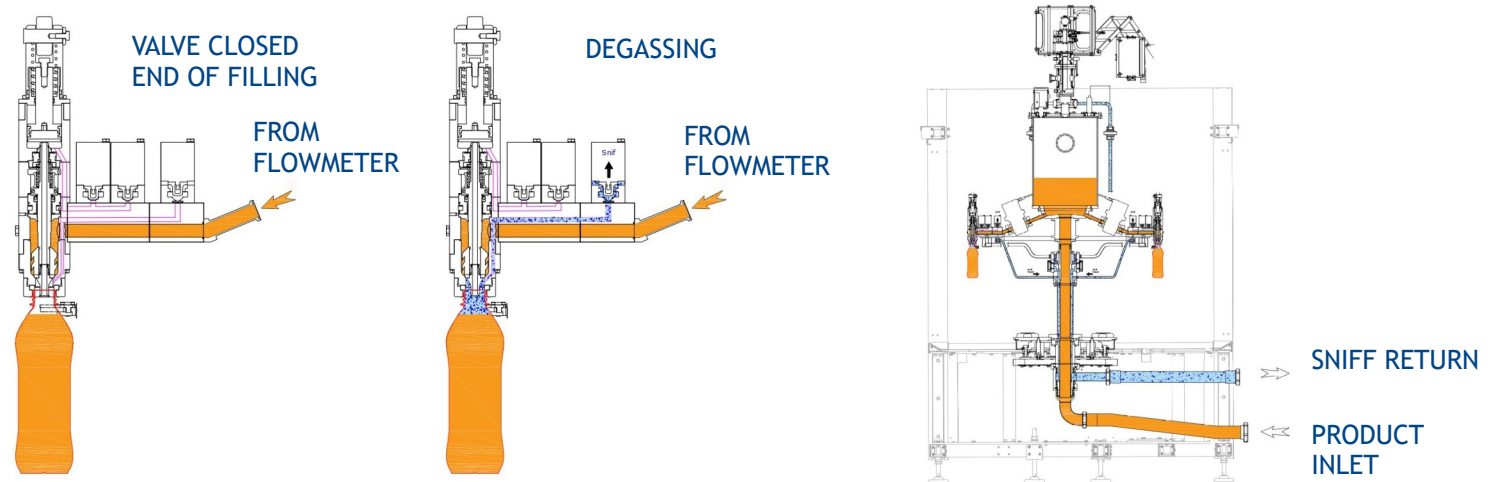
HEVS: filling phase

- ▶ the filling starts, *the product goes through the flow meter that measure the volume of the product.* When the flow meter detect the quantity of product set, the filling valve close and the filling stop;
- ▶ the flow speed can be reduce in the final phase of the filling in order to optimise the filling process. This is possible thanks to the partialization of *the return of the CO2 from the bottle.*



HEVS: filling phase

- ▶ at the end of the filling the CO₂ return channel is closed and the pressure inside the bottle is gently taken off from the sniff channel;
- ▶ the sniff channel is collected in one single chamber from all the filling valves with a single drain outside the filling area.

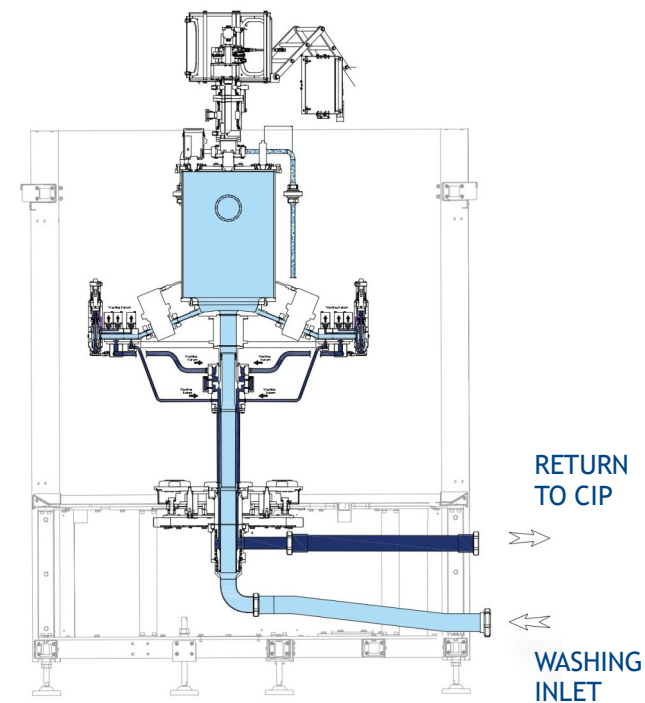
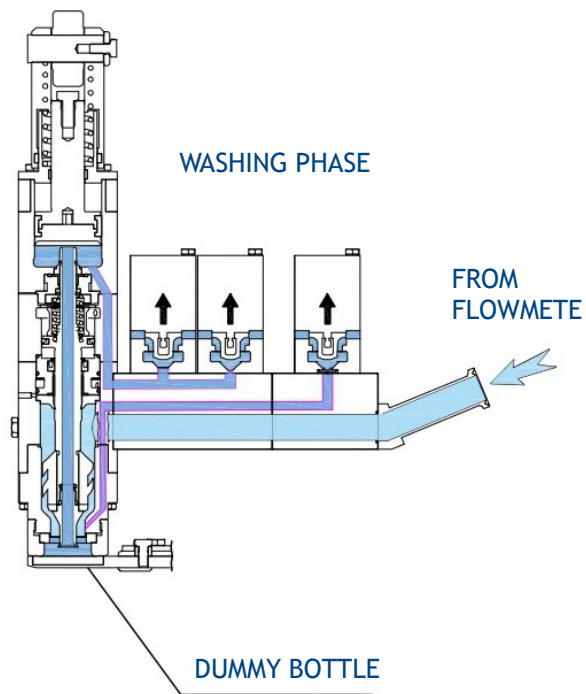


HEVS: the product tank

Grazie alla nuova costruzione della macchina è stato realizzato un nuovo serbatoio più compatto nelle dimensioni e più facile nella gestione. Il serbatoio è completo con:

- ▶ CO2 load and *discharge valve completely cleanable*;
- ▶ *capacitive probe* connected with the proportional valve at the product inlet. Thanks to this the level inside the tank is always constant. This allow a constant flow and a constant pressure inside the filling valve while filling;
- ▶ certified safety valve that allow up to 6 BAR of pressure while filling.

HEVS: CIP sanitation



HEVS: filling speed

The filling valves is specially designed to fill carbonated product in PET bottles. The product that can be filled are:

- ▶ carbonated water;
- ▶ CSD.

The machine can fill with no problem both carbonated and still products.

Maximal speed (bph) on the machine HEVS 96 filling valves

Carbonated water	40.200 (0,5 lt) - 24.100 (1,5 lt)
CDS	32.100 (0,5 lt) - 19.000 (1,5 lt)



Thank you
for your
attention

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