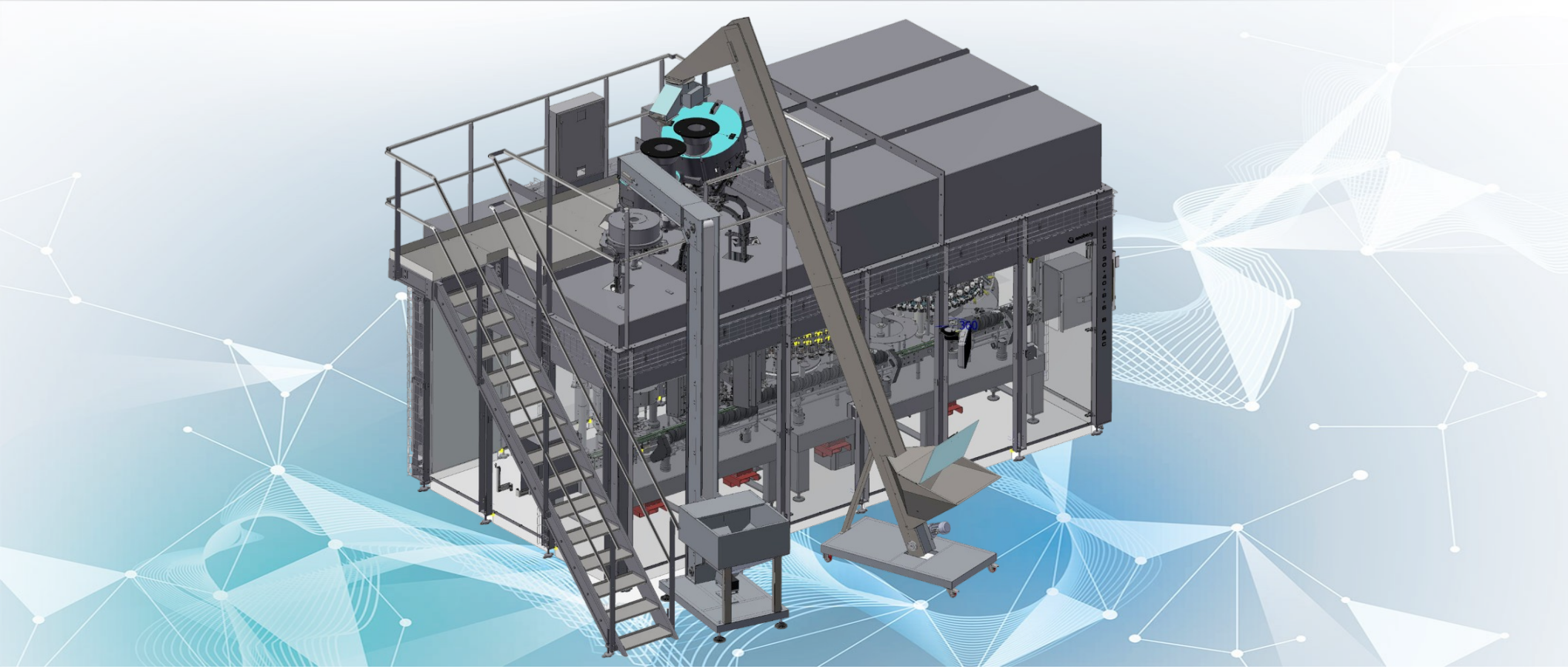


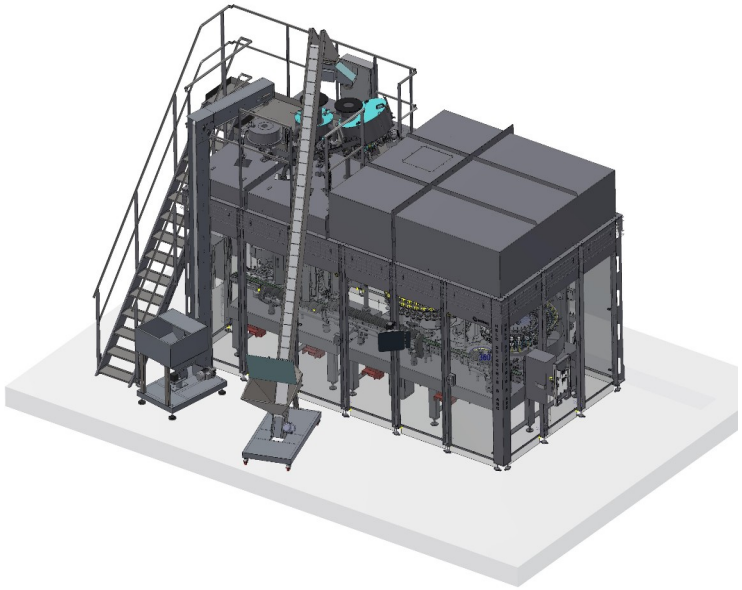
# HELC

## Hyperclean Electro-pneumatic Level filling System for Carbonates products

## HELC: 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 *HELC series*.

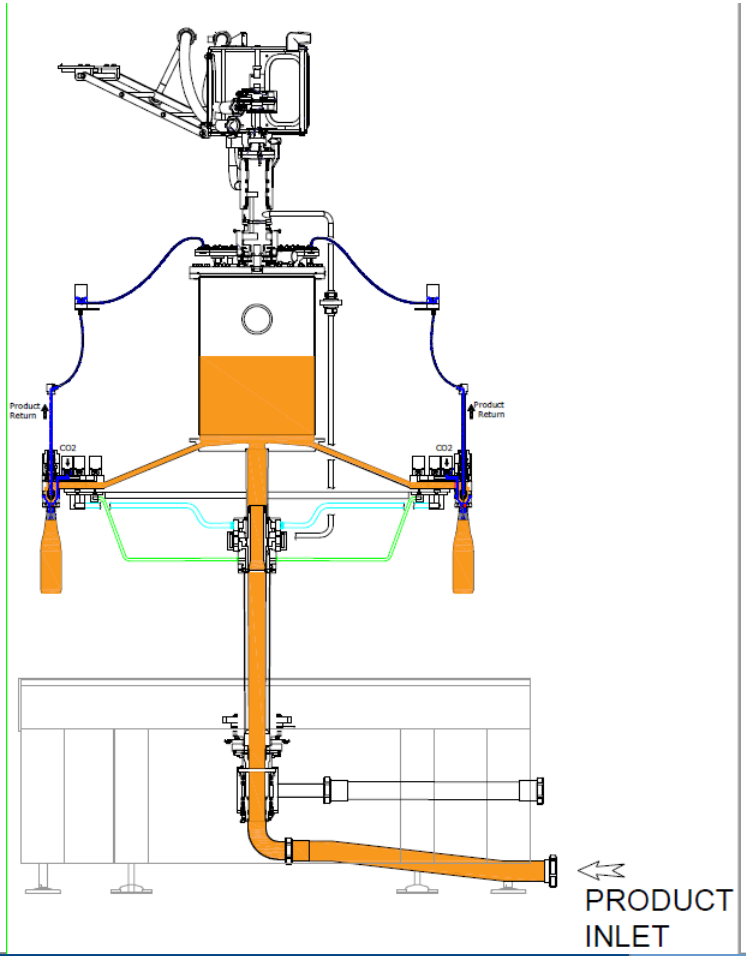
HELC: Hyperclean Electro-pneumatic filling system By Level for Carbonated product



## HELC: how does it work?

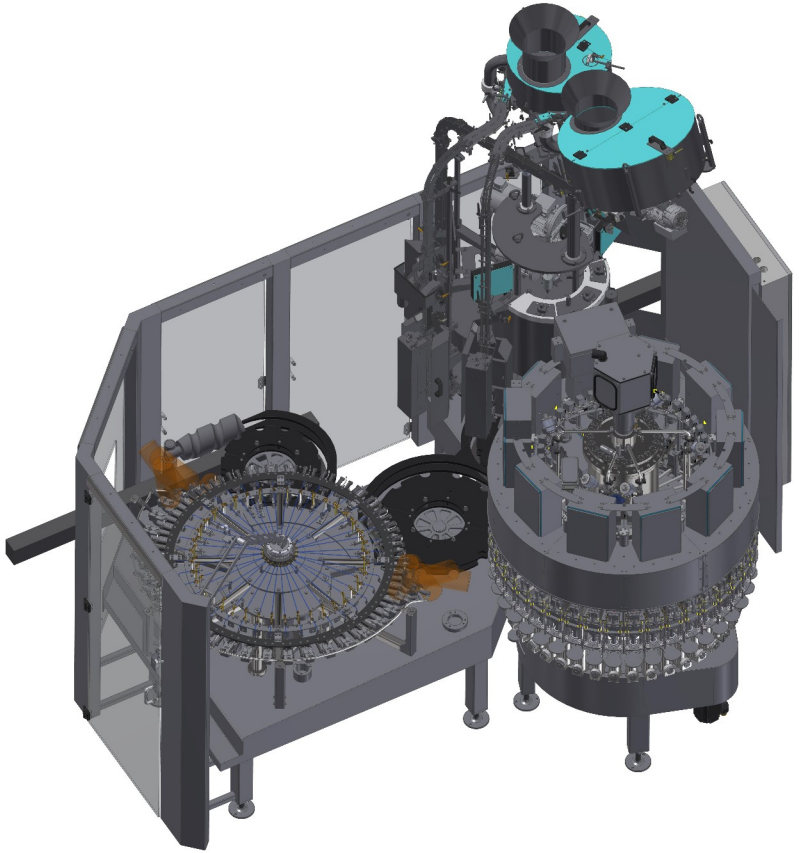
The *isobaric filling system that fills by level is* designed for filling *carbonated products.*

Products *like beer, CSD and carbonated water* either in glass bottle or in glass and PET bottle can easy be filled with HELC machine. The heart of the machine is the electro pneumatic filling valve that allows to directly manage all the filling phases (CO2 injection, pre-evacuation, self levelling, sniff) from the machine HMI and to directly memorize the recipe in the machine program.

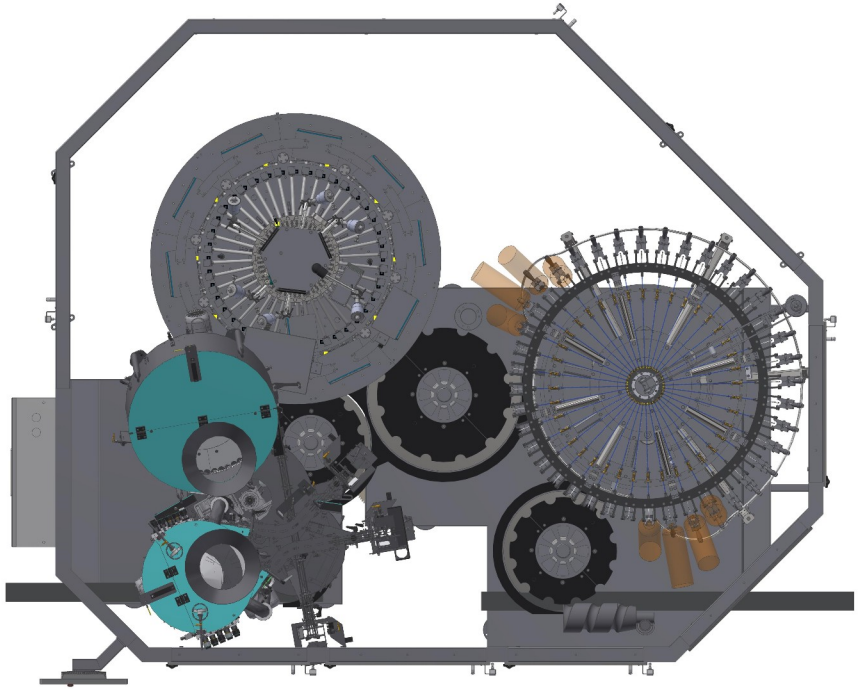


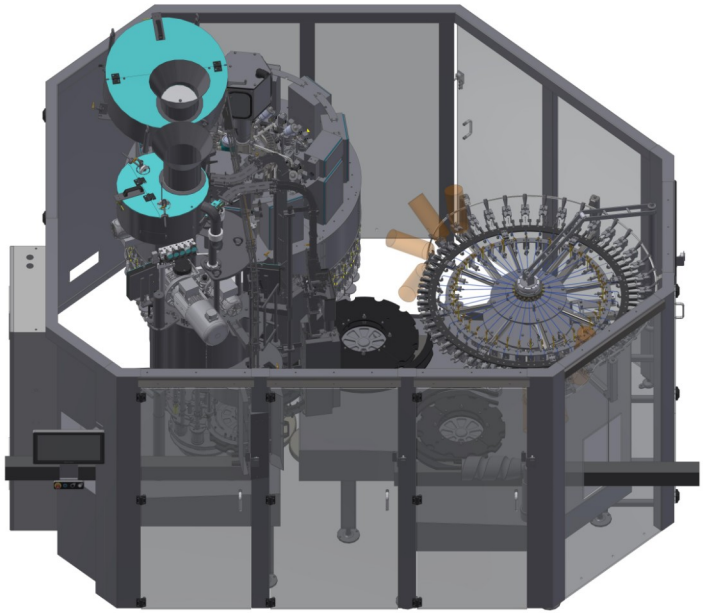
## HELC: the frame

- Frame made of *stainless steel AISI 304*;
- fully welded frame which makes the entire machine a solid and resistant structure;

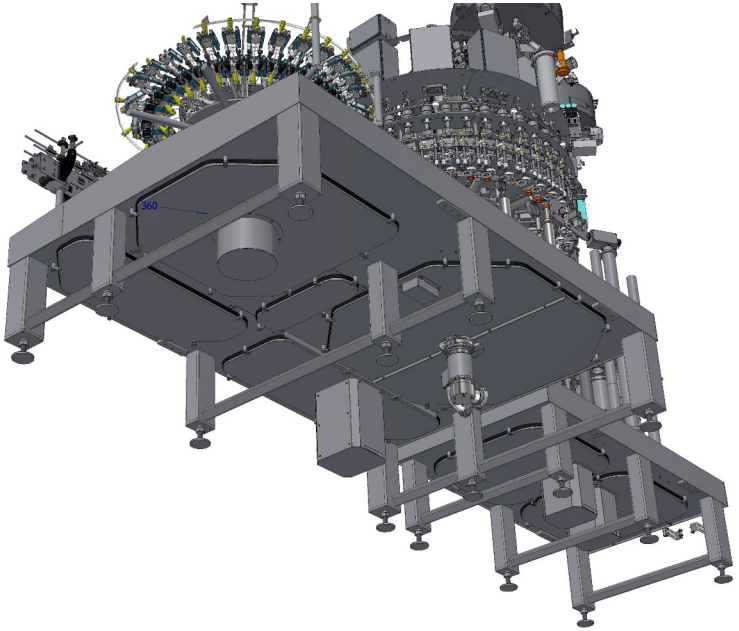


# HELC: the frame





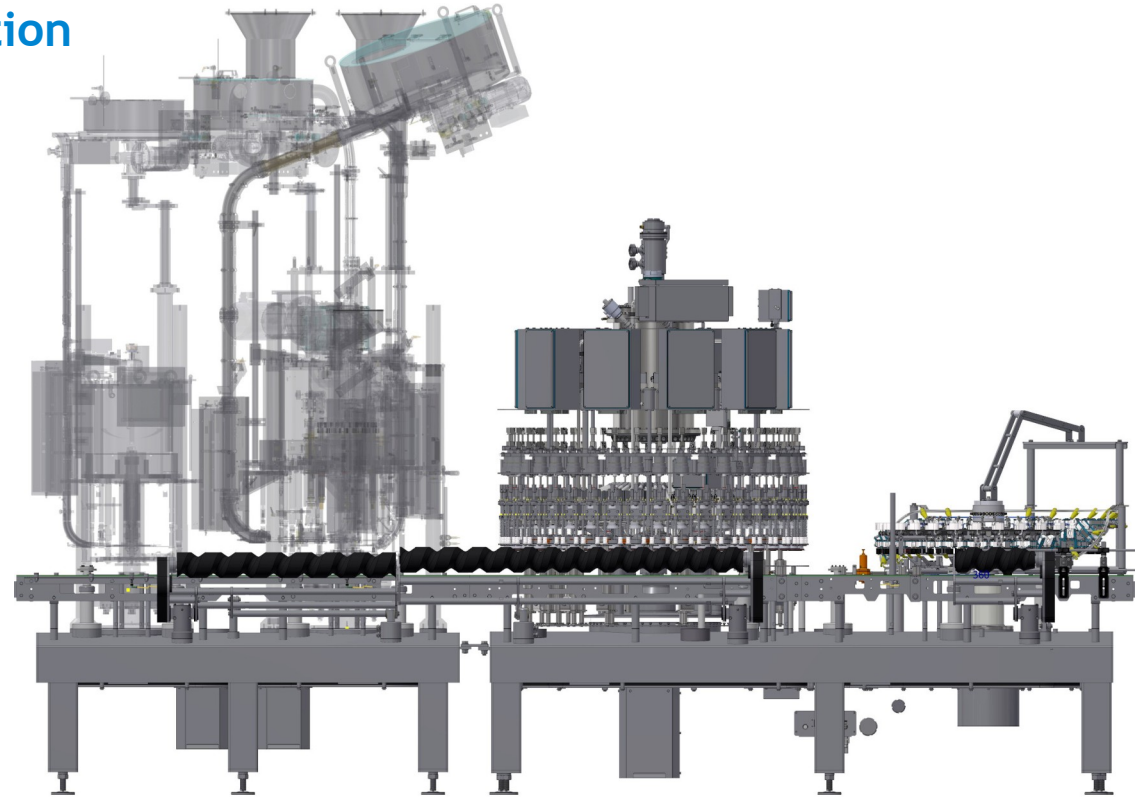
## HELC: the frame



- the filling chamber is *completely isolated* from the transimissions, which therefore do not come into contact with any type of liquid;

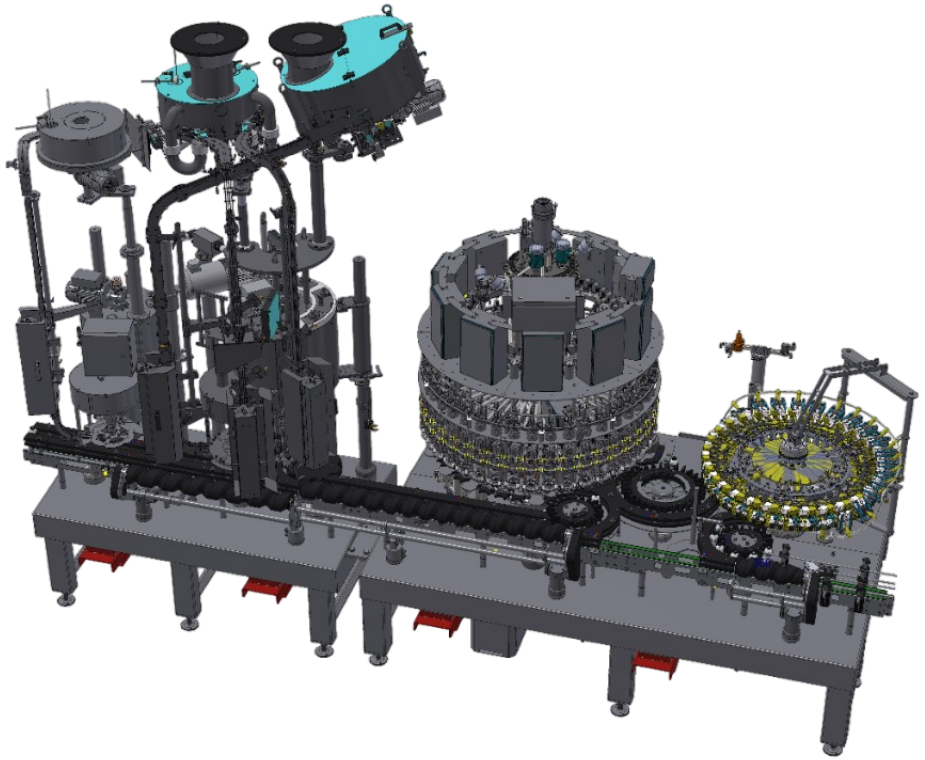
## HELC: the frame - special configuration

- Separate frame for the capping turret with a multiformats cochlea as connection with the fillling module, thus allowing:
  - Higher flexibility and optimization of configuration;
  - Faster changeover



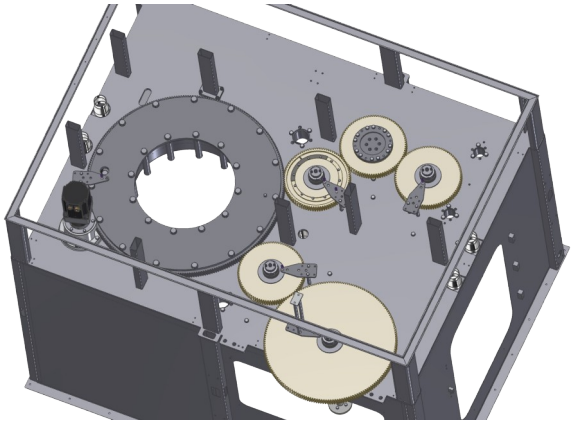
## HELC: the frame - special configuration

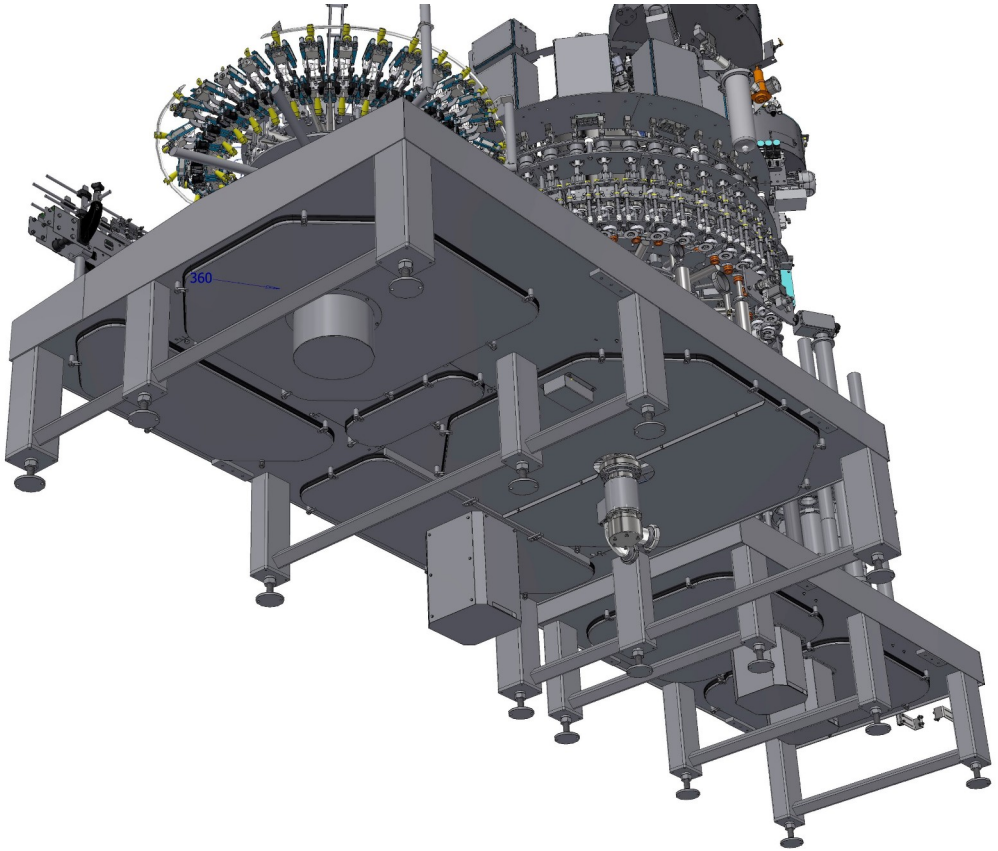
- the multiformats cochlea has an automatic set-up to reach the proper position on the base of the bottle format recipe memorized in the HMI.



## HELC: motion transmission

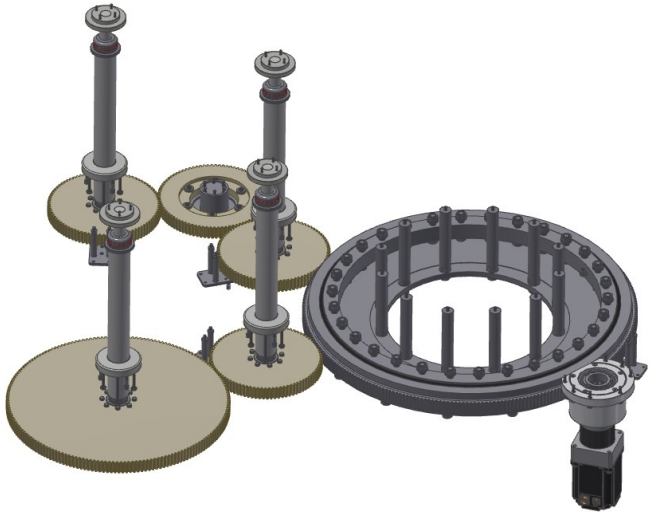
The movement of the carousels of the machine is obtained with *robust gears*. A gear placed in the base of the machine corresponds to each *star-wheel* placed in the filling environment. The gears are moved by a *brushless motor* managed by the machine program.

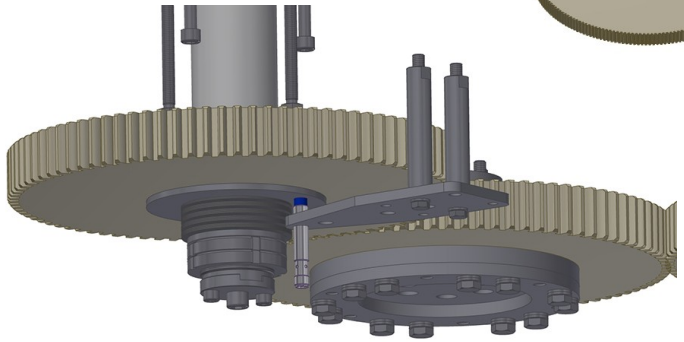




## HELC: motion transmission

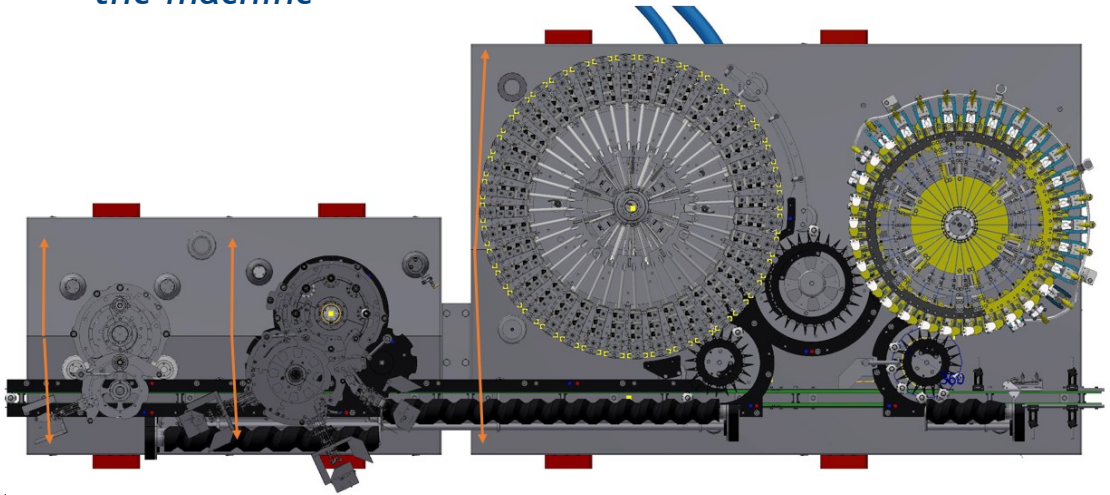
- The synchronism between all the *star-wheels* is guaranteed by the *toothed wheels* having the same diameter as the corresponding handling carousel in the working environment;
- each transmission shaft is equipped with a *mechanical emergency clutch*.

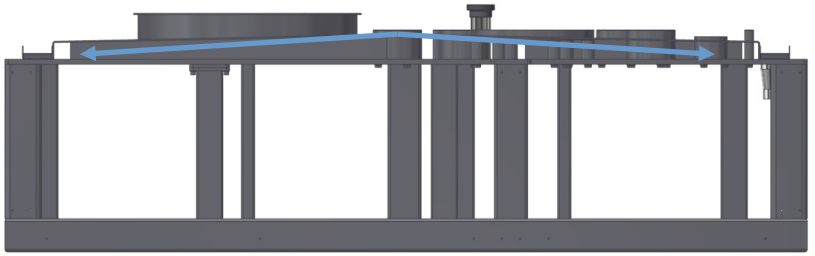




# HELC – filling environment: inclined base plate

The basement of the machine is inclined towards the *floor or the drainage point of the machine*





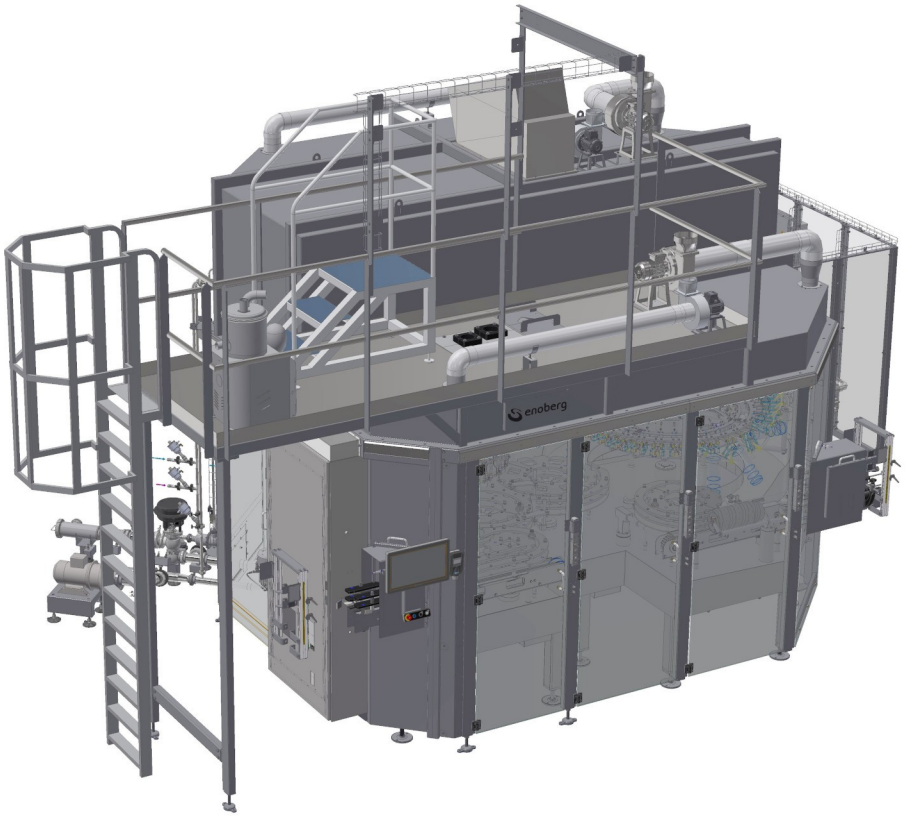
Advantages of the solution:

- *drainage of liquids* from the machine base, thus avoiding liquid stagnation;
- higher level of hygiene.

# HELC – Safety fences - walk-in configuration

- Safety fences designed to grant an easy access into the machine

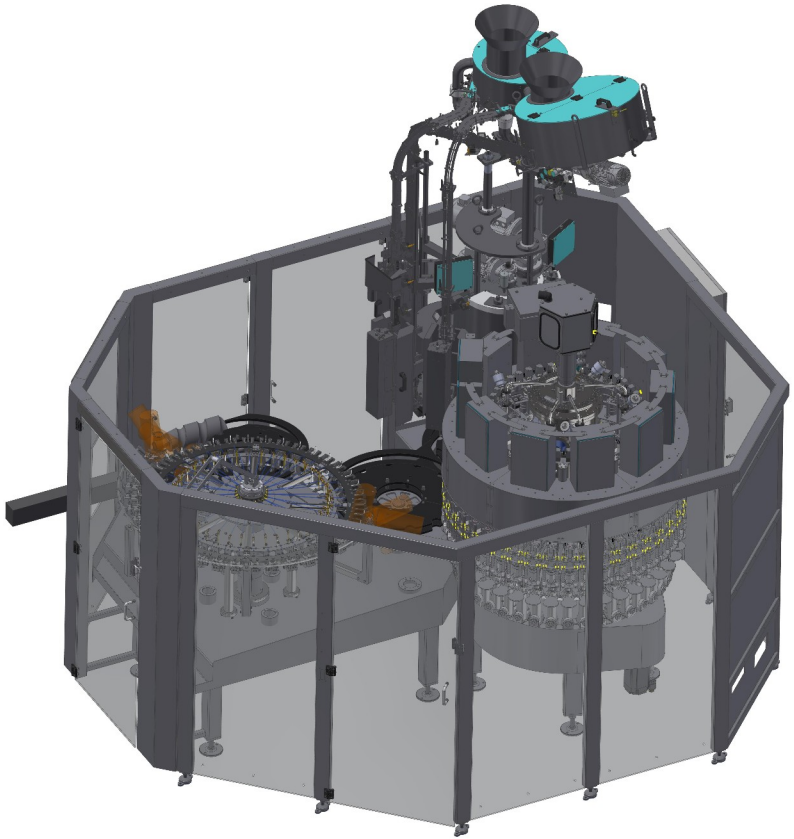
- Doors realized in tempered glass



# HELC – Safety fences - walk-in configuration

- Possibility to add the cover on the top of the machine (optional)

- All the utility connections are centralized in one unique area of the machine

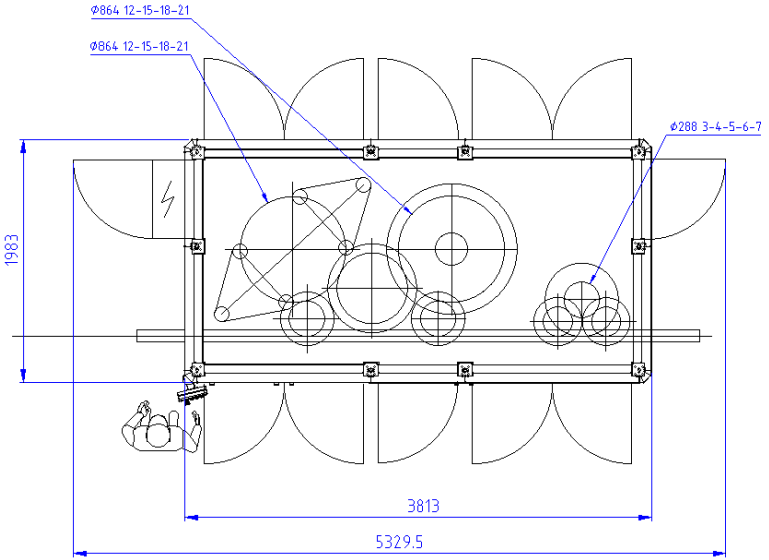


## HELC: compact frame

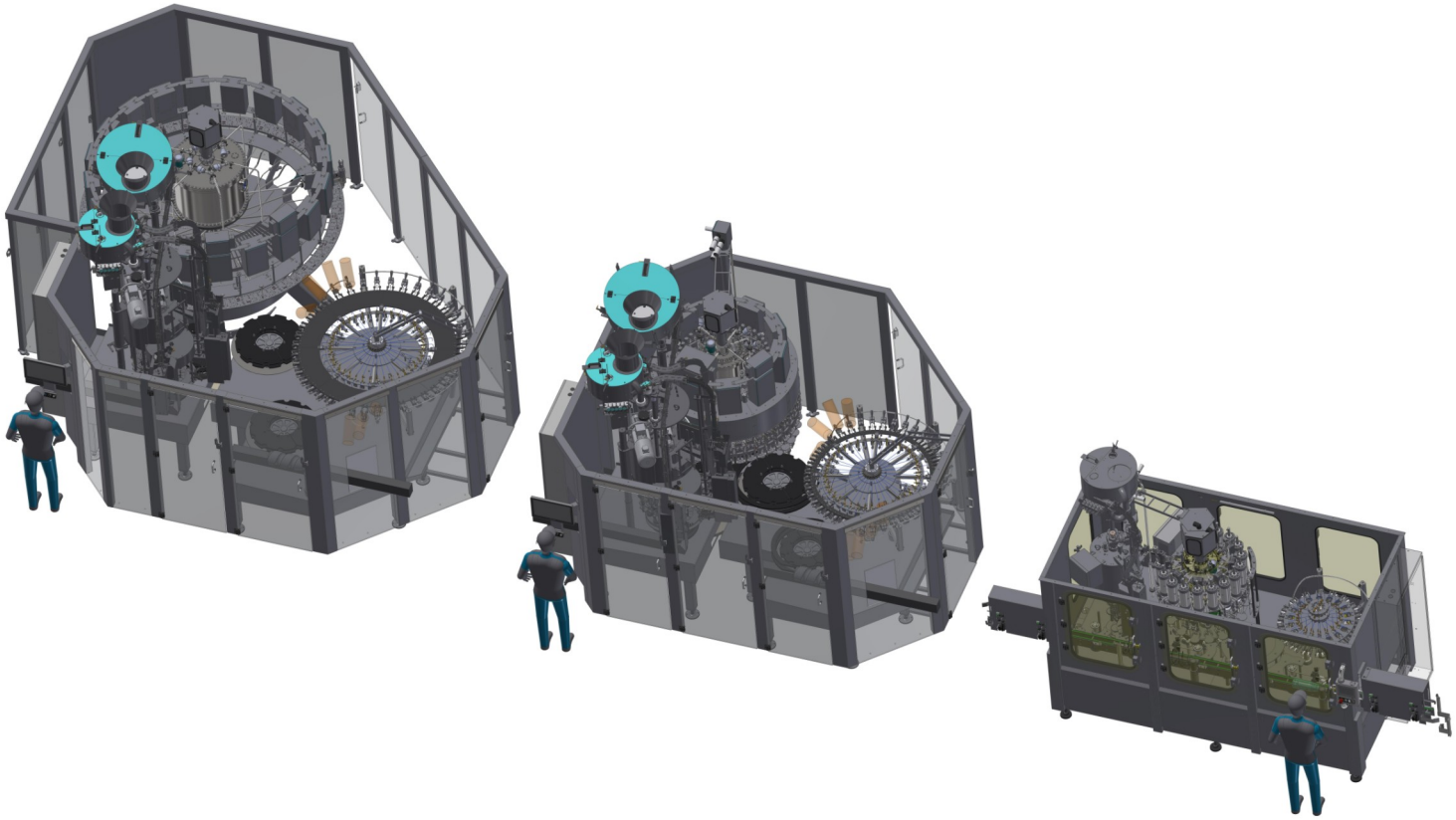
With this machine model we introduce the new *compact frame* that allow to produce machine up to 24 filling valves on a single, small dimension frame.

The new frame allows to combine in the best possible way *the number of filling heads with the number of capping heads* thanks to a transfer screw between the filler and the capper that allows the change of pitch inside the machine.

In this way the frame is suitable to a *high number of combination* between filler and capper and it optimizes the possible machine configuration.

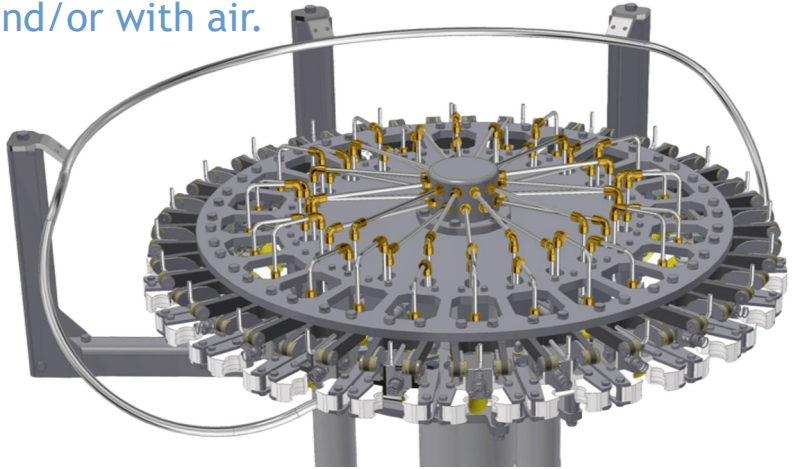


# HELC:
## the complete series



## HELC: the rinsing module

For the stand alone machine, a rinsing module can be added to rinse the bottles before filling. The bottles are turned up-side-down by means of a twist device that ensures their correct positioning over the rinsing nozzles. The rinsing can be done with liquid and/or with air.

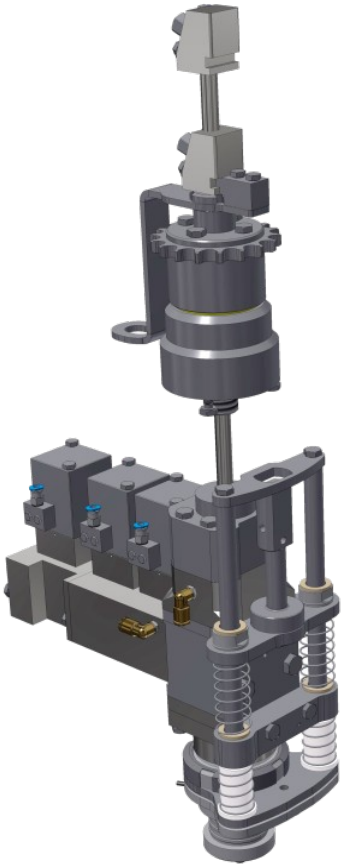


No bottle – no spray system is always included.

Double treatment and product recirculation are availables as optional

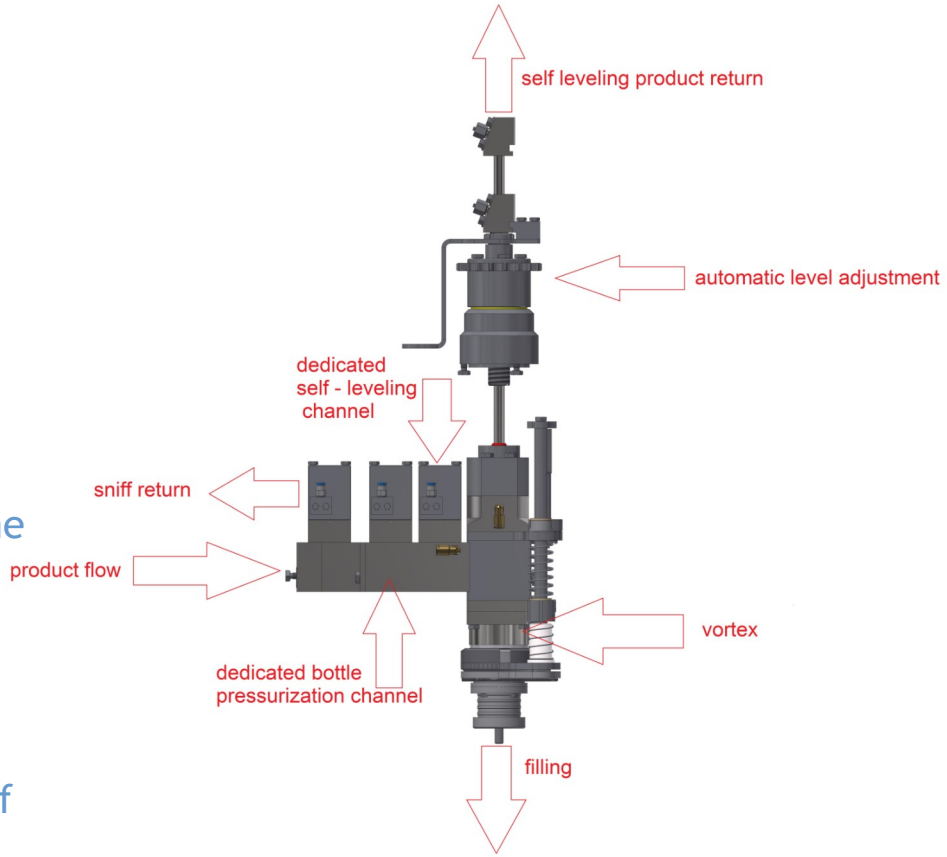
## HELC: filling valve

- *High tecnological design of the filling valve* with indipendent flow of CO2 inside the bottle;
- deidcated 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 turbolence while filling;*
- management of the filling steps thanks to recipes memorized in the machine program, easy to recall on the HMI;



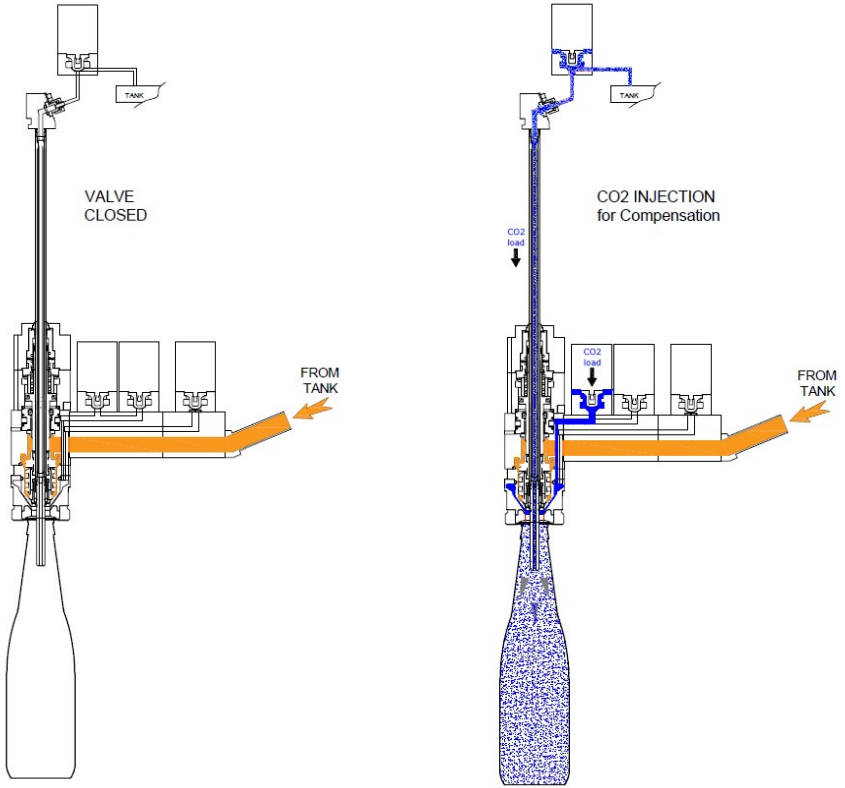
# HELC: filling valve

- filling valves completely build in *stainless steel AISI 316;*
- Automatic and/or centralized fill level adjustment system; it allows faster change overs and less manual operation inside the filling machine;
- Self levelling system in order to always grant the same fill level in every bottle
- Possibility to fill CSD up to 12°C
- Decompression/sniff of the bottle thanks to a dedicated channel, collected in one single drain out of the filler.



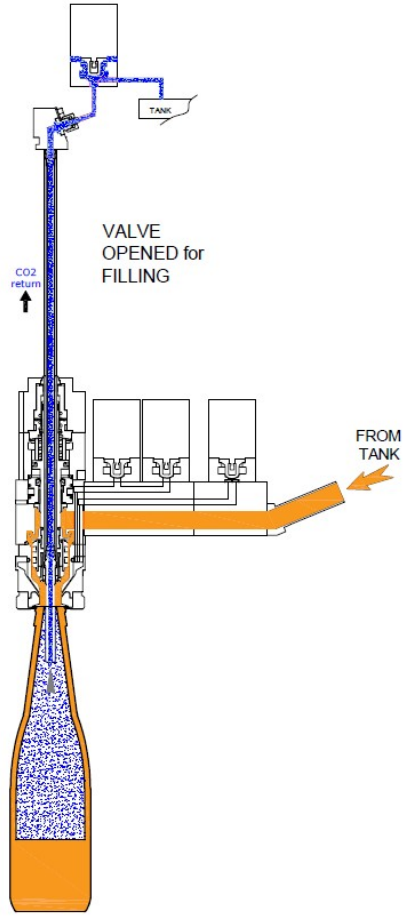
# HELC: filling phases (carbonated water and carbonated soft drinks)

- the bottle is driven by the body (bottom handling system;
- A Lifting piston allow to lift *up the bottle* and to put it in contact with the filling valve;
- the CO2 flows inside the bottle by means of a dedicated channel. The inner part of the bottle reaches the same pressure as the one in the filling tank *(isobaric condition)*.



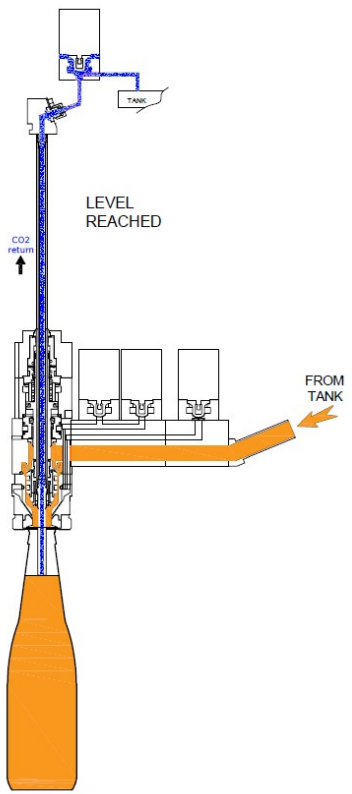
# HELC: filling phases (carbonated water and carbonated soft drinks)

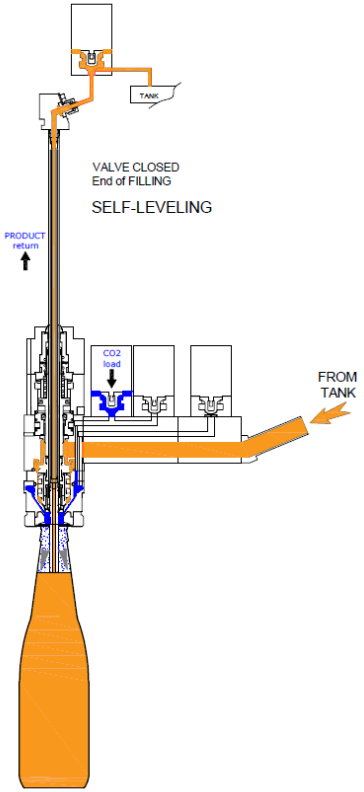
- the filling starts, *the product goes through the valve and get into the bottle by flowing on the sides of the bottle*. When the product reach the proper level the filling stops;



# HELC: filling phases (carbonated water and carbonated soft drinks)

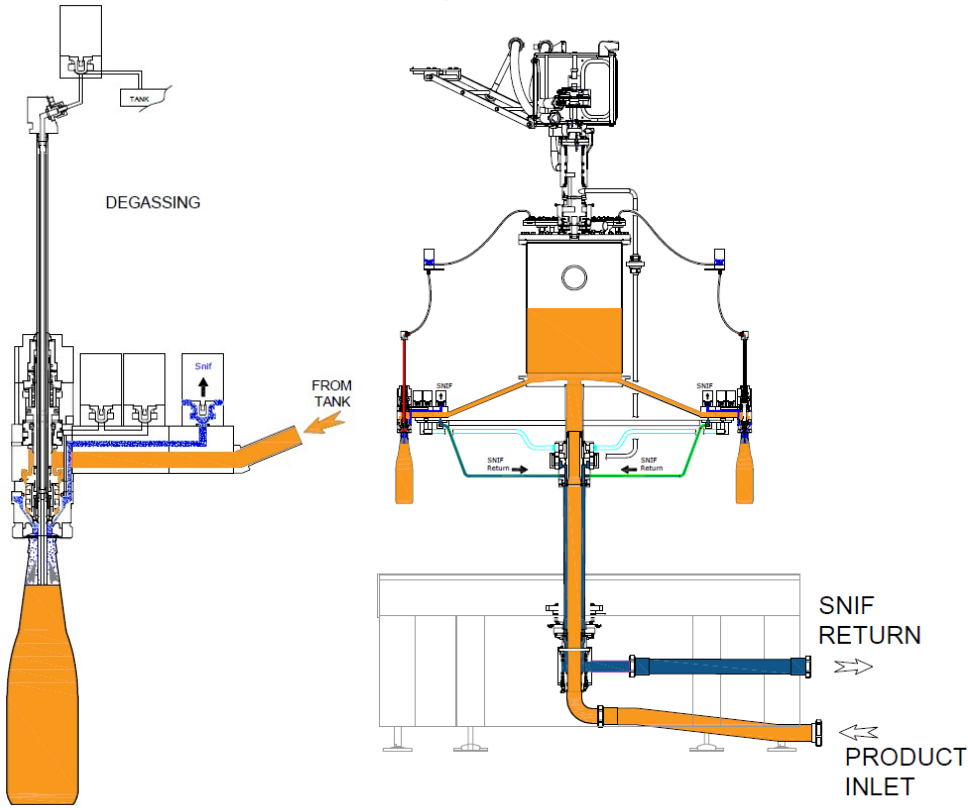
- at the end of the filling process the CO2 return channel is closed and the bottle is still under pressure (isobaric condition);
- by means of a dedicated channel a slight overpressure is given to the bottle in order to push out any possible excess of product, thus granting exactly the same fill level in every bottle (self levelling system);



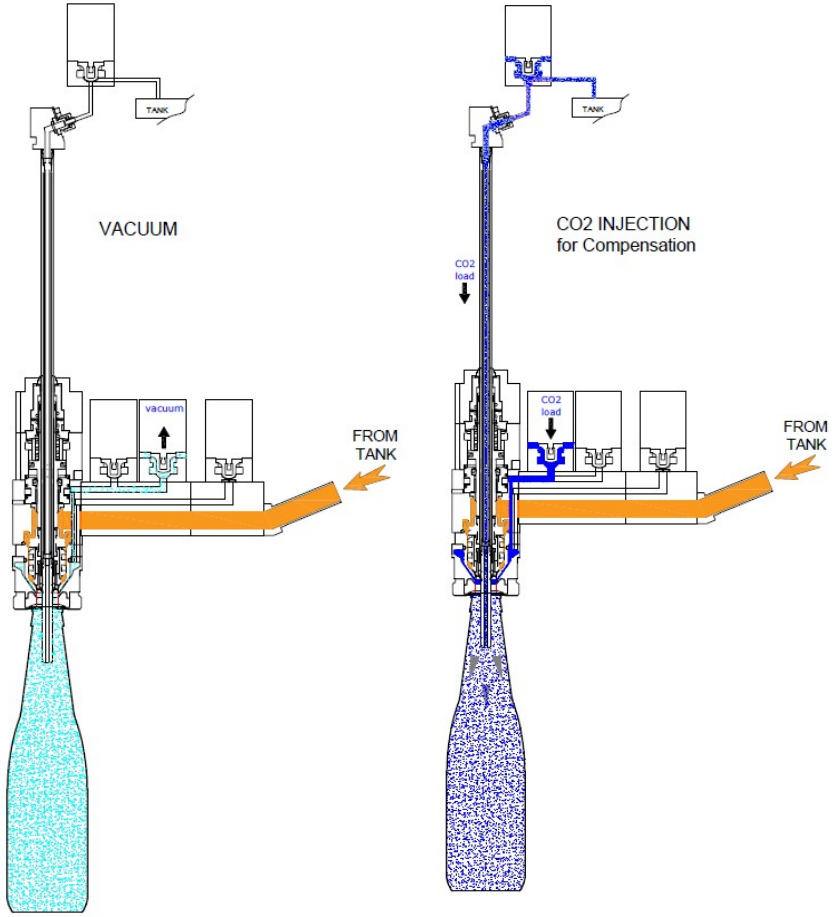
# HELC: filling phases (carbonated water and carbonated soft drinks)

- After levelling the product into the bottle, the overpressure is gently discharged form the bottle by means of the decompressing channel (sniff). The sniff channel of all the valves is collected in one single chamber and driven to a single drain outside the filling area.



# HELC: filling phases for beer filling

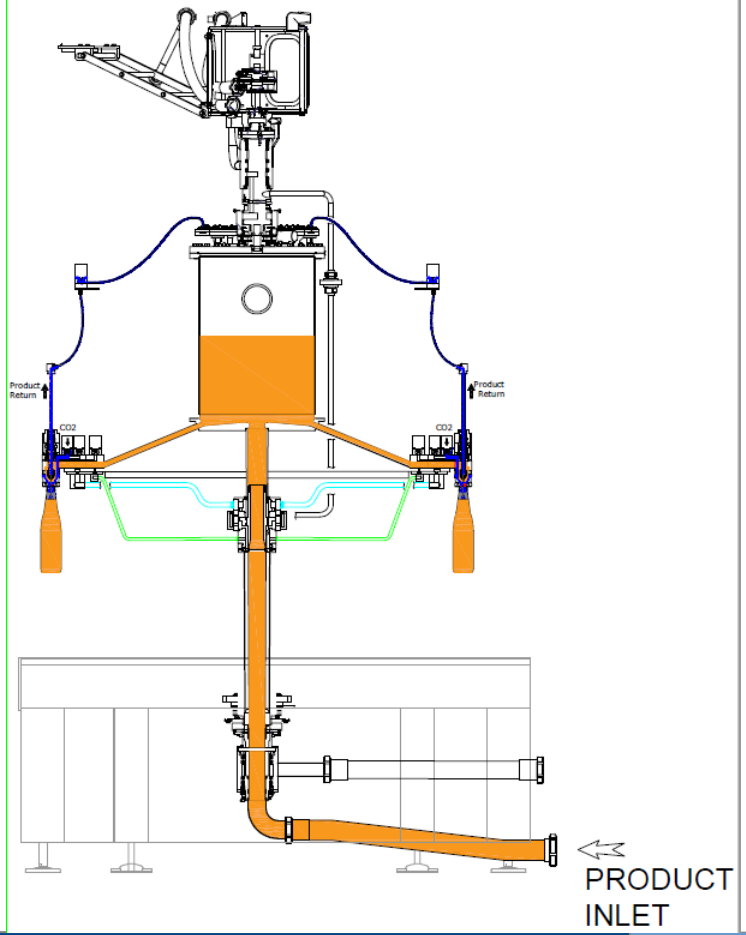
- Beer filling is done in the same way as described before, with the double pre-evacuation stages before the starts of the filling.
- During the pre-evacuation phase the dedicated electro penuamtic controll of the valve connects the bottle with the vacuum tank; all the air inside the bottle is taken our and the CO2 injection is made inside the bottle. The process is done twice in order to take off most of the oxygen inside the bottle and reduce the contact between beer and oxygen while filling. The secondo CO2 injection allow to reach the isobaric condition and to start the filling.



## HELC: the product tank

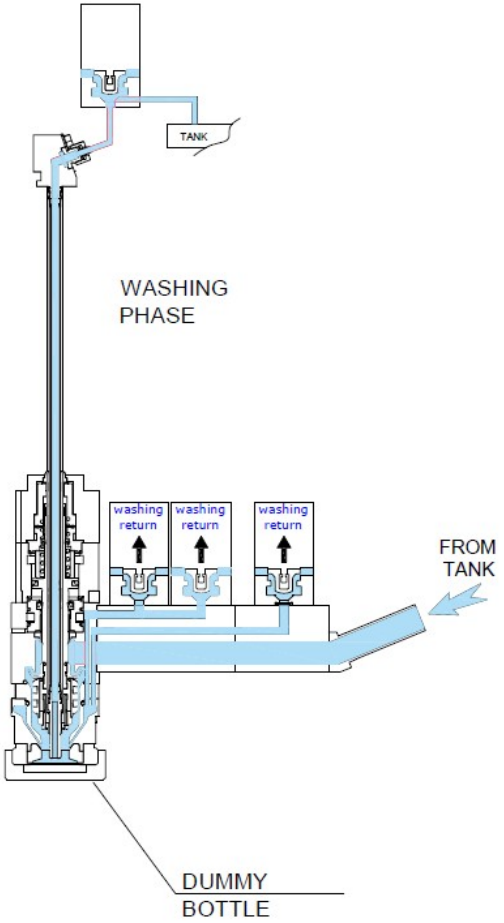
Thanks to the new design of the machine a new and more compact product tank is used on the machine, in a way to be easily cleaned and better managed.

- 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 allows up to 6 BAR of pressure while filling.



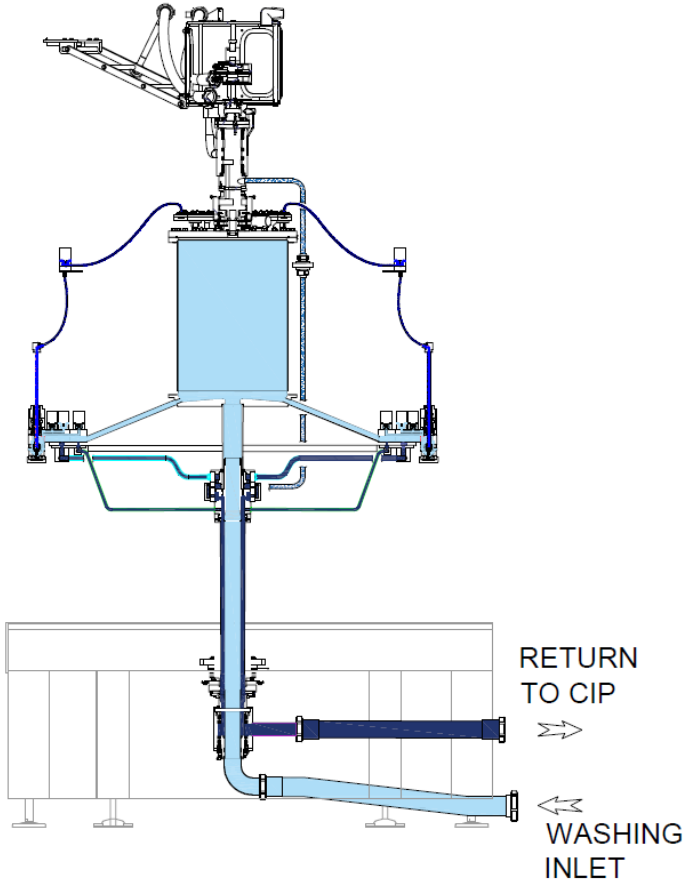
# HELC: CIP cleaning

All the parts in contact with the product are easily *cleanable* thanks to the dummy bottle installed on the filling valve.



# HELC: CIP cleaning

The automatic manage of the cleaning phases allows to clean *all the potential contaminated pipes* like breathing pipe, sniff, vacuum channel. This allows an adeguate cleaning and sanification of the machine.



## HELC: Hyperclean Electropneumatic filling system by Level for Carbonated product

### Filling speed

| HELC Max speed (bph)<br>From 15 to 80 filling valves | |
|---|---|
| Carbonated water | 36.000 (0,5 lt) |
| CSD (12°C) | 30.000 (0,5 lt) |
| Beer (0-2°C) | 24.000 (0,33 lt) |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# Thank you for your attention

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