

HRLF

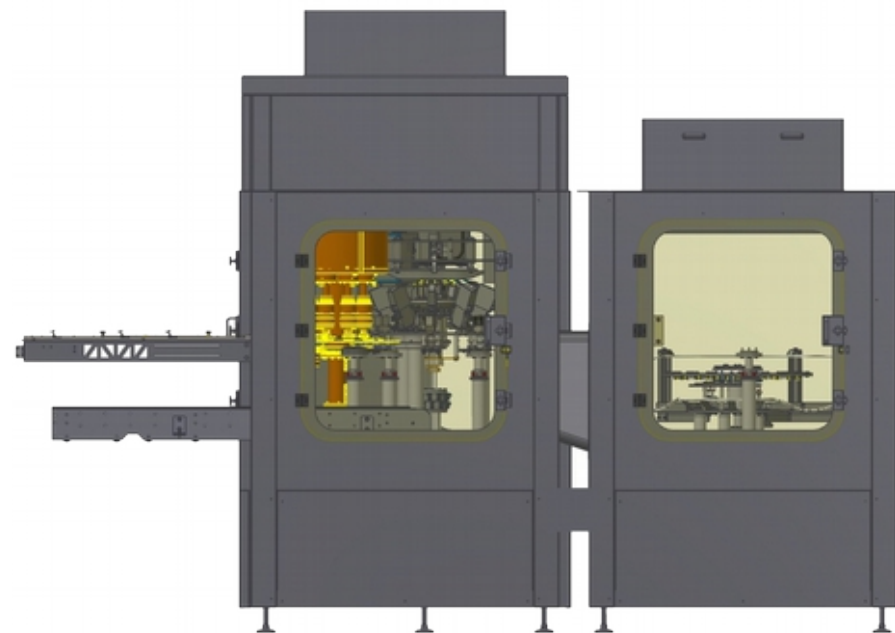
Hyperclean filling machine, filling system with product Recirculation by Level for Flat products



HRLF: 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 RLF series with the realization of the new *HRLF* series, suitable for the filling of flat product in glass bottle. The filling is done with product recirculation and with the possibility of HOT FILLING.

HRLF: Hyperclean filling machine, filling system with product Recirculation by Level for Flat products.

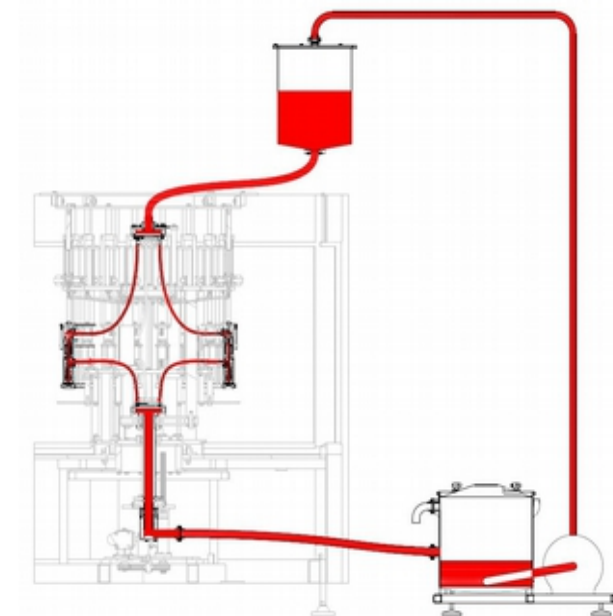


HRLF: how does it work?

The filling system with product recirculation is suitable for *filling flat products in glass bottles*. The filling valve is designed to give an high accuracy on the filling level. The channel dedicated to air return allows an higher filling speed compared to the standard gravity machine.

At the end of the filling, a small part of the product (or the foam created during the filling) *is collected in a lateral tank, ready to be filled again*.

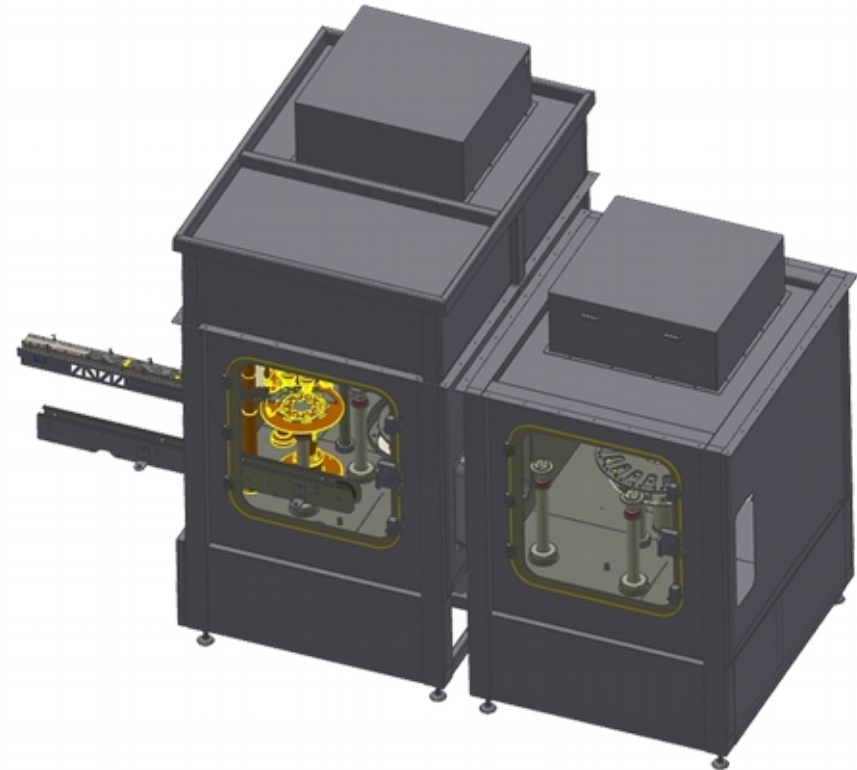
Specially designed for the glass bottle filling, the machine can work both PET and GLASS bottles and can be fitted to work in HOT FILLING condition.



HRLF: machine dimensions

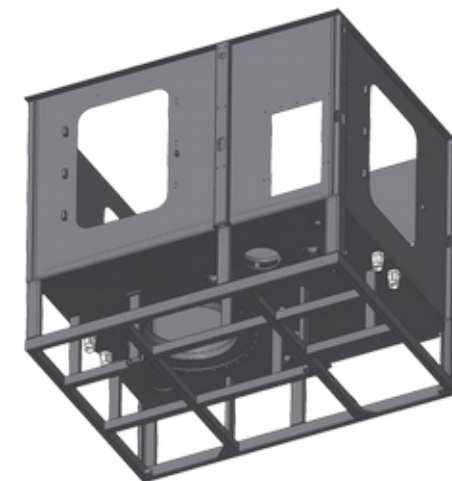
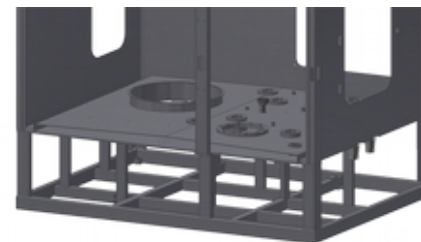
The frame of the new HRLF is realized with reduced dimension. Advantages of the solutions:

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



HRLF: the frame

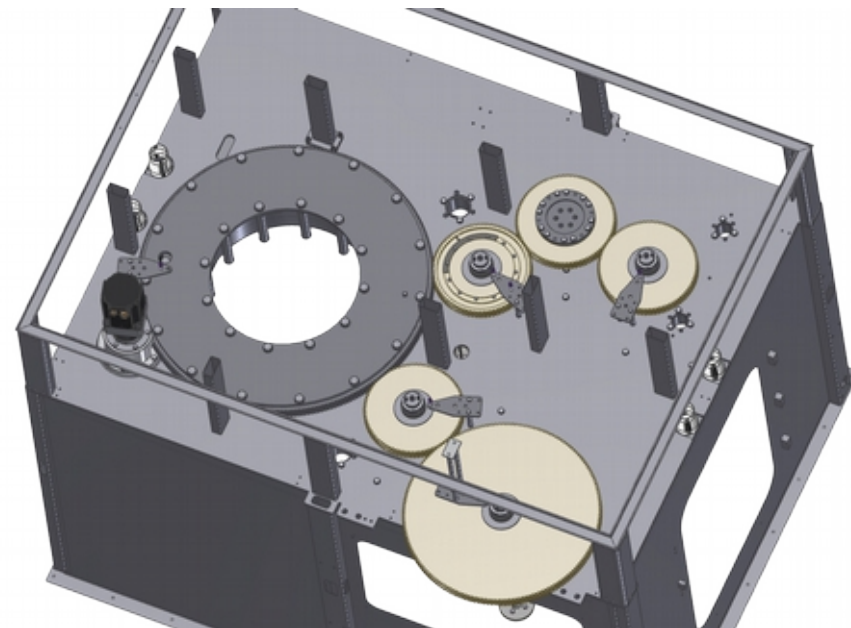
- ▶ Frame made of *AISI 3040* stainless steel;
- ▶ fully welded frame which gives the entire machine a solid and resistant structure;
- ▶ the filling chamber is *completely isolated* from the transmissions, which therefore do not come into contact with any type of liquid;
- ▶ tempered glass protections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



HRLF: motion transmission

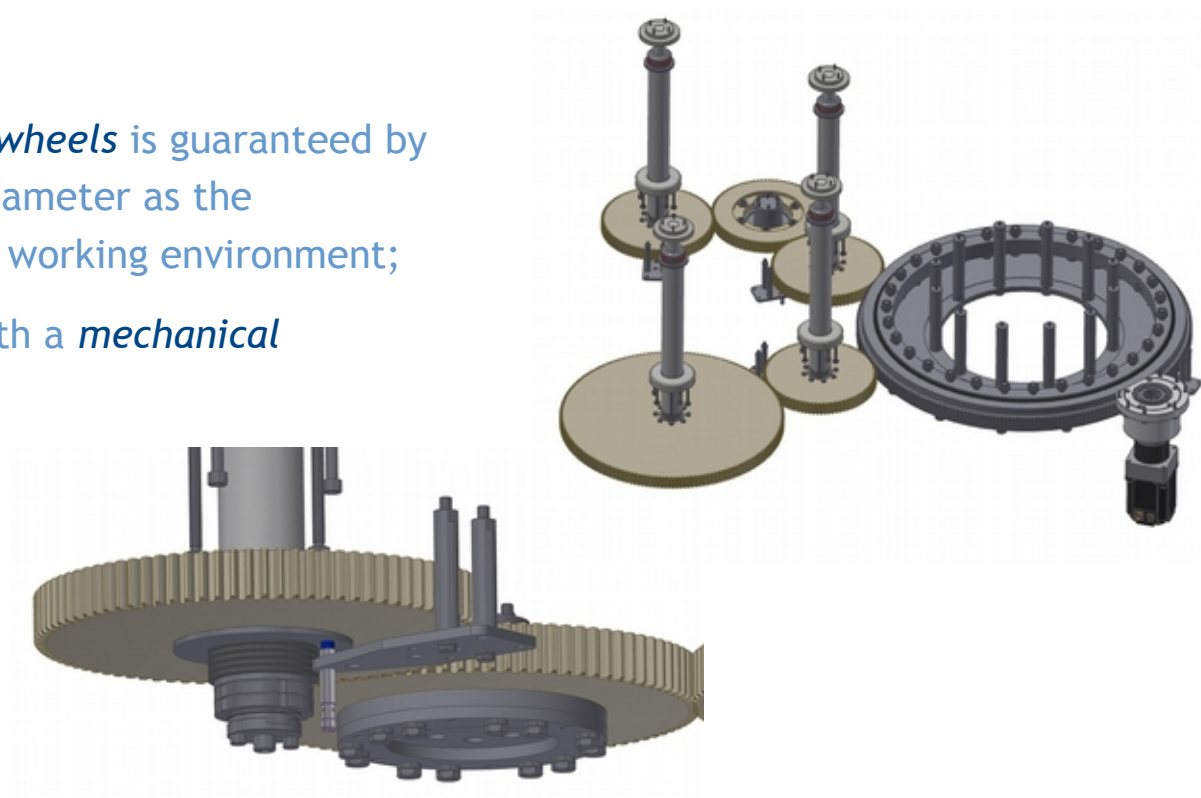
The movement of the carousels of the machine is obtained with *robust gears* positioned in the base of the machine. A gear placed in the base of the machine corresponds to each *star-wheel* placed in the filling environment. The gears are moved by a single *brushless motor* managed by the machine program.

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



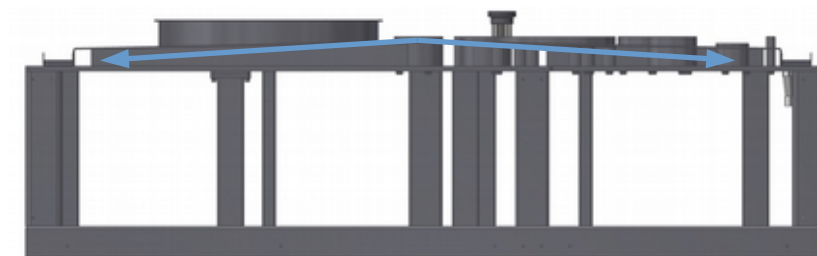
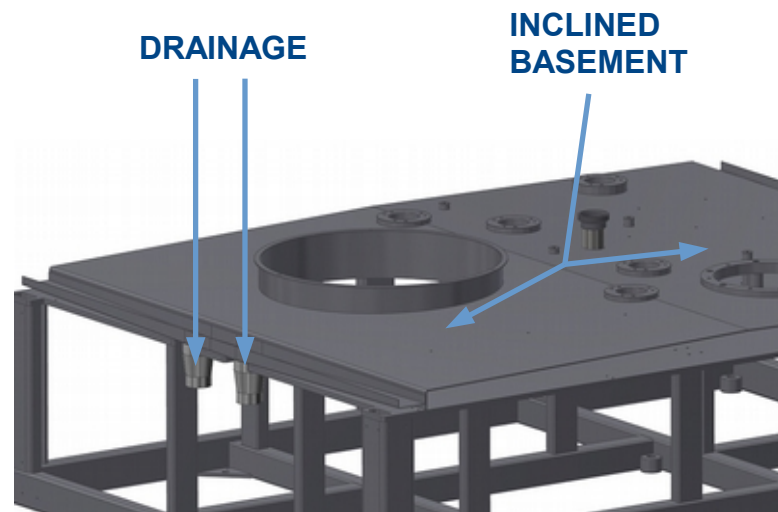
HRLF: motion transmission

- ▶ 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*.



HRLF - filling environment: inclined base plate

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

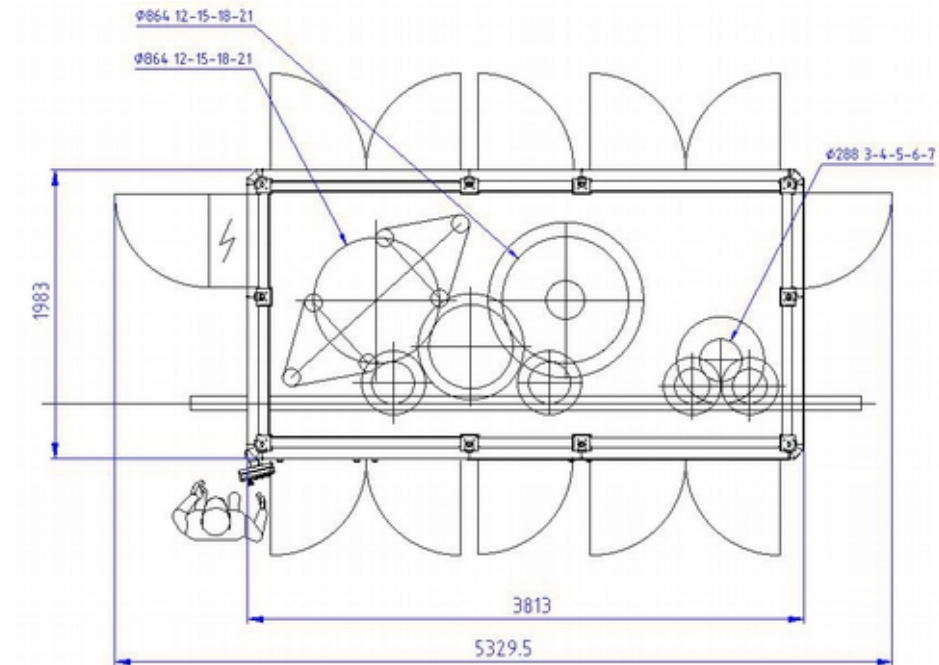


Advantages of the solution:

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

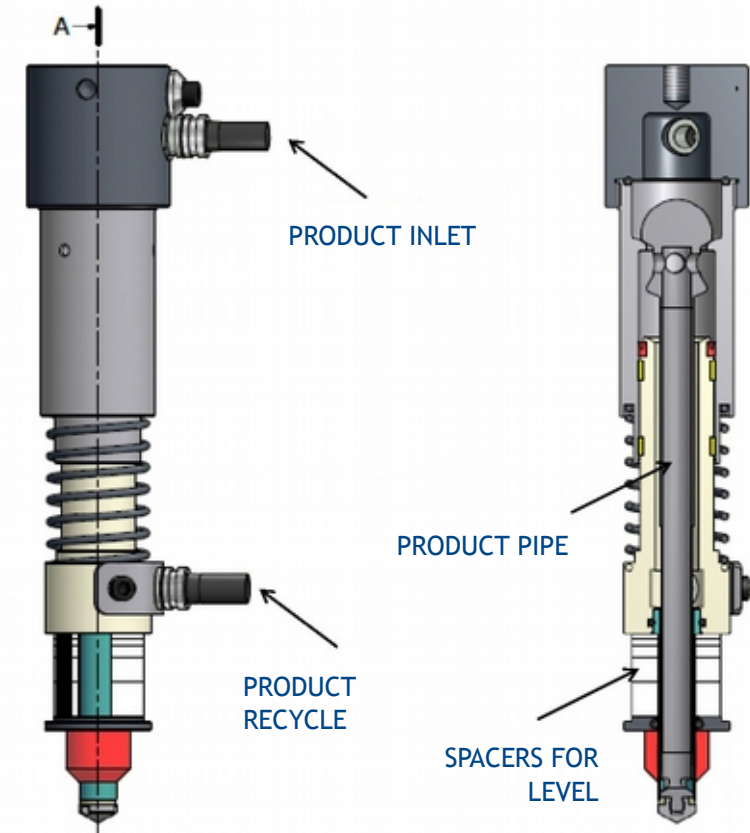
HRLF: the layout

With this machine model we introduce the new **COMPACT FRAME** that allow to produce machine up to 21 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.



HRLF: filling valve

- ▶ Filling valve completely built in *S/S 316*;
- ▶ *filling by level*, with a channel dedicated to air return from the bottle and product/foam recirculation at the end of the filling;
- ▶ *filling valve available in different diameters* in order to make the filling more efficient for bottles with different necks;
- ▶ the filling is done on the side of the bottle in order to have a smooth filling, which is *less turbulent as possible*.



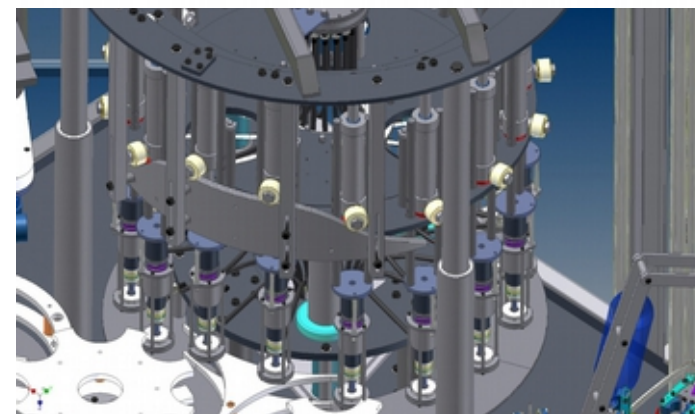
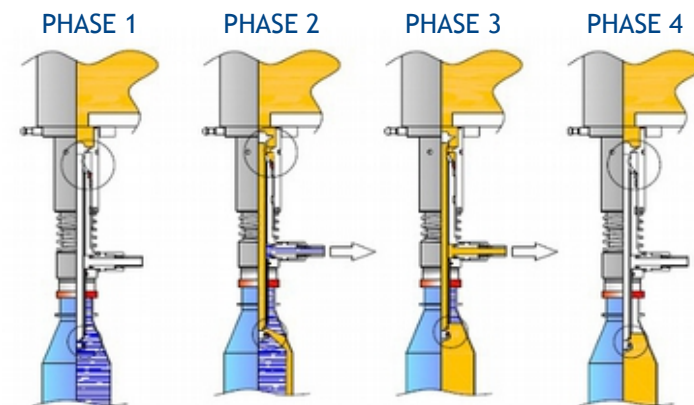
HRLF: filling phase

PHASE 1 - The filling valve goes inside the bottle: the bottle and the valve are now sealed.

PHASE 2 - The bottle opens the filling valve and the filling starts. The product is filled inside the bottle, while the air comes out from a dedicate channel.

PHASE 3 - The filling product reaches the desired filling level. The additional product and the possible foam are taken out in a dedicate air/product return channel and collected in a lateral tank outside the machine.

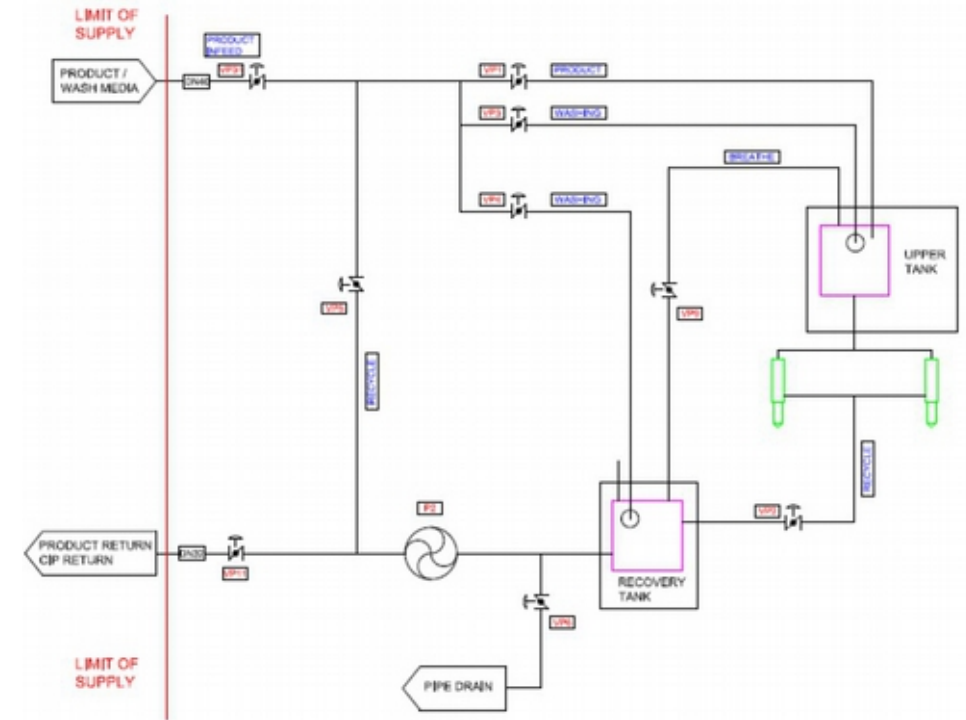
PHASE 4 - The filling valve is lifted up: there is no more contact with the bottle. The valve is closed and the filling ends.



HRLF: CIP sanitation

Thanks to the application of the *dummy bottles* and thanks to the dedicated piping construction, all the parts in contact with the product are easily *cleaned and sanitized*. All the cleaning phases are managed in automatic from the machine program.

All the tanks are cleaned with the SPRAY BALL in order to guarantee a proper cleaning.



HRLF: filling product and speed

The filling valve is suitable to fill still products in both *GLASS and PET bottle*. The products that can be filled are:

- ▶ liquor and spirit
- ▶ juice
- ▶ oil
- ▶ Sauce
- ▶ vinegar
- ▶ syrup

Maximal speed (bph) on the machine HRLF 50 filling valves	
Oil	21.300 (0,75 lt) - filling valve Ø18 mm
Foaming juice	17.600 (0,5 lt) - filling valve Ø16 mm
Vermouth	18.900 (1 lt) - filling valve Ø18 mm

The special design of the filling valve also allows to fill *foamy products* and can work in HOT FILLING conditions.



Thank you
for your
attention

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