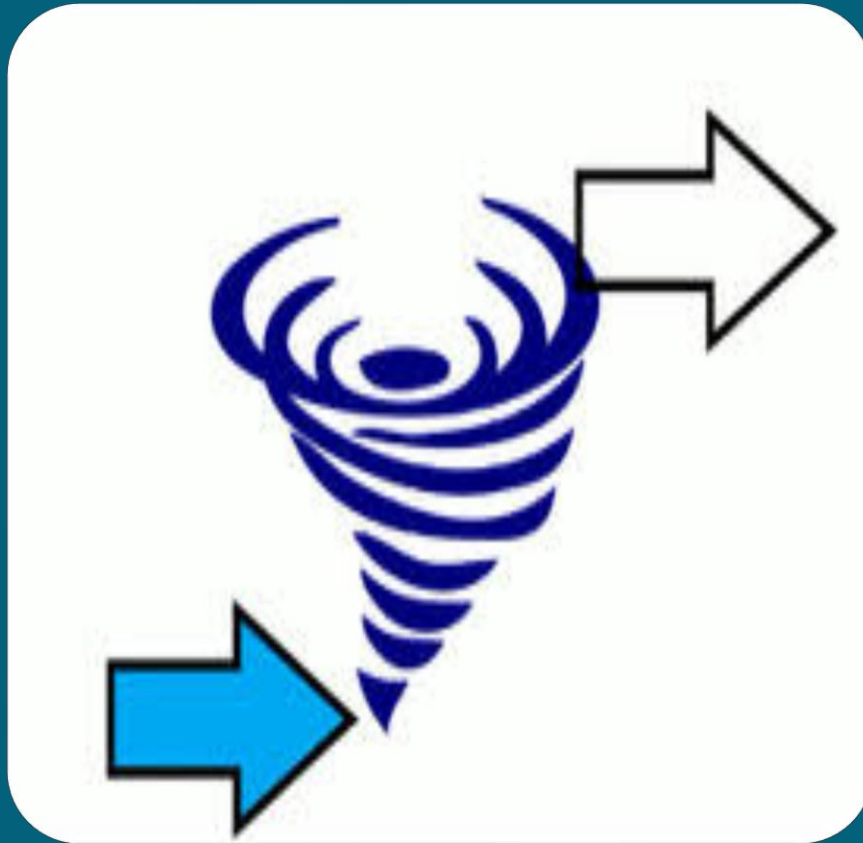




TARVISIA FILLING SYSTEM FOR PREMIUM BEVERAGES



SPIN CLEAR, LLC

SPIN CLEAR LLC

**Filling lines,
equipment, support.**

SPIN CLEAR started working with Dipran in 2019 for the Beer, wine, and spirits industries. With 20+ years in the market SPIN CLEAR has the ability to understand clients needs and provide optimal filling solutions for their facilities. See how spin clear can be your filler solution today.

Introduction To Tarvisia

TARVISIA filling system allows producers of high quality still products to fill products using a low vacuum fill valve:

- ◎ Oxygen pickup below 200ppb
- ◎ Maximum loss of alcohol 0.05g/l
- ◎ Reduced loss of aroma & volatile flavours
- ◎ Reduction of inert gas use

TARVISIA FILLING SYSTEM



TARVISIA FILLING CONCEPT

- ④ Using a low vacuum filling system the TARVISIA system relies on a patented fill valve design
- ④ The design has no dynamic moving internal parts and no gaskets
- ④ Maintenance on the valve is virtually non-existent
- ④ The fill valve produces a low turbulent fill along the side of the bottle

TARVISIA FILLING CONCEPT (cont.)

- The TARVISIA filling valve can be sanitised within 45mins without dummy bottles
- Due to the design of the valve the fill height is the same & level every time
- Bottle formats are simple to change
- The air from the bottle is removed to the atmosphere eliminating contact between the liquid & air

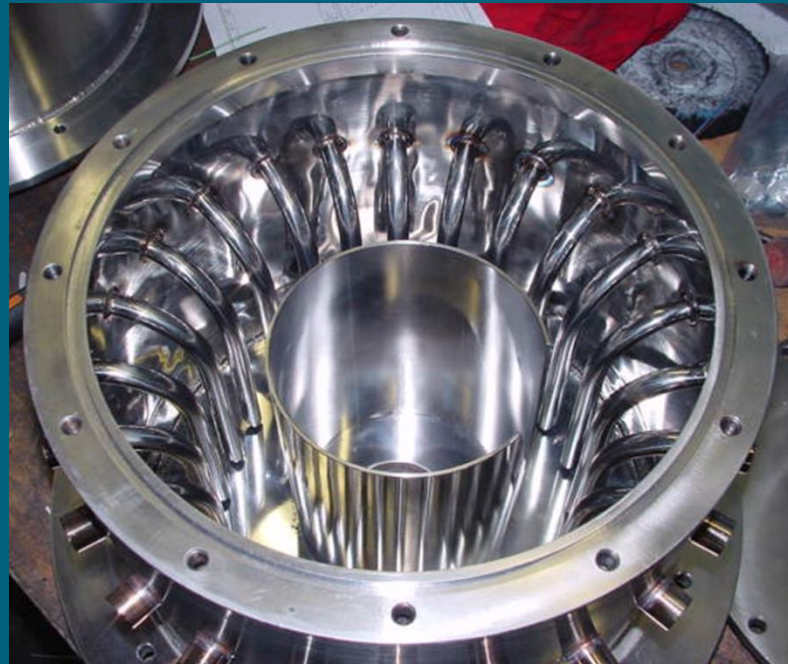
Low Vacuum Defined

Low vacuum	$10^5 - 10^2$
Medium vacuum	$10^2 - 10^{-2}$
High vacuum	$10^{-2} - 10^{-6}$
Iper high vacuum	$< 10^{-6}$
Extreme vacuum	$< 10^{-10}$

If we focus on the first three positions above we see the influence of the type of vacuum on the liquid:

- **Low vacuum:** does not alter or influence the liquid
- **Medium vacuum:** minimally modifies the liquid
- **High vacuum:** modifies and changes the liquid

Filler Bowl System



The **TARVISIA** system utilizes a filler bowl, with a constant level which feeds the bowl without interruption.

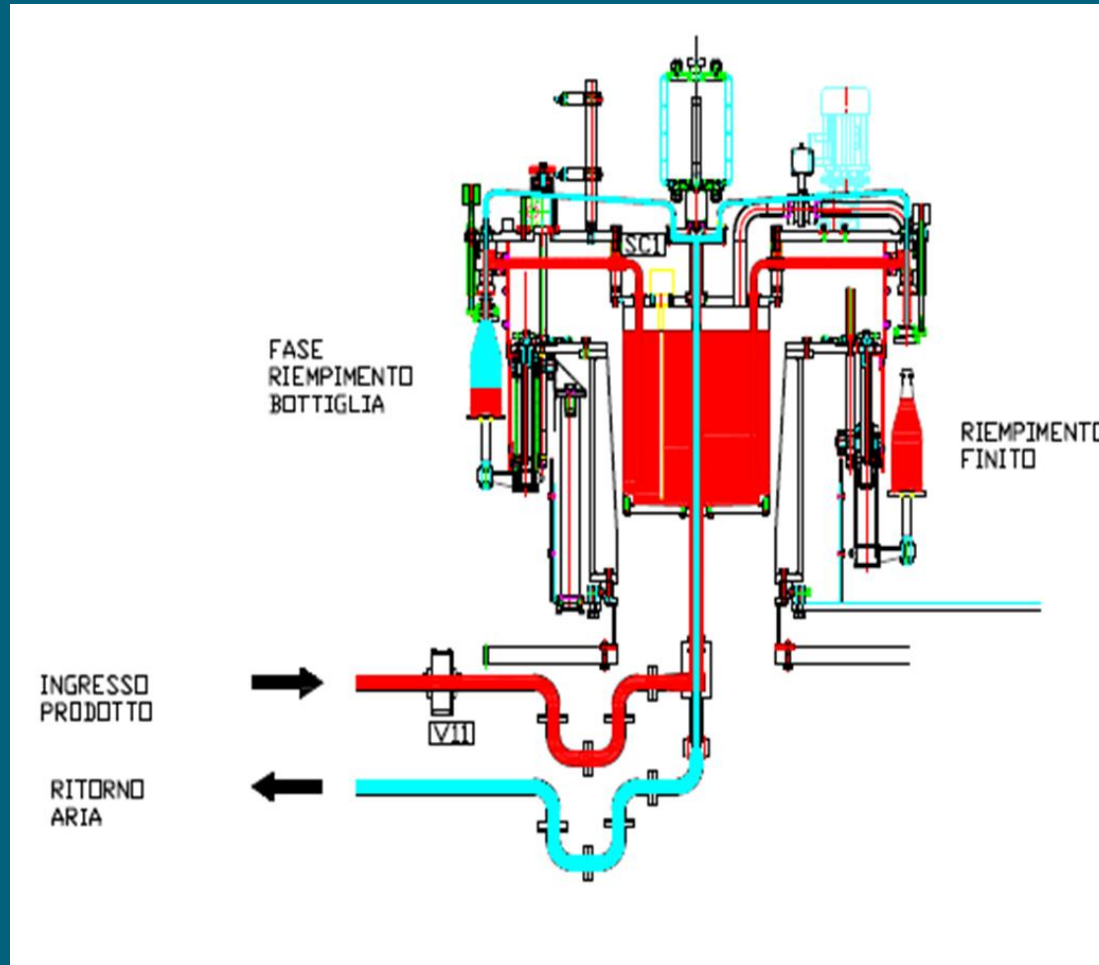
The tank has a low pressure and a blanket of inert gas on the product to maintain low oxygen throughout filling.

TARVISIA RECOVERY SYSTEM

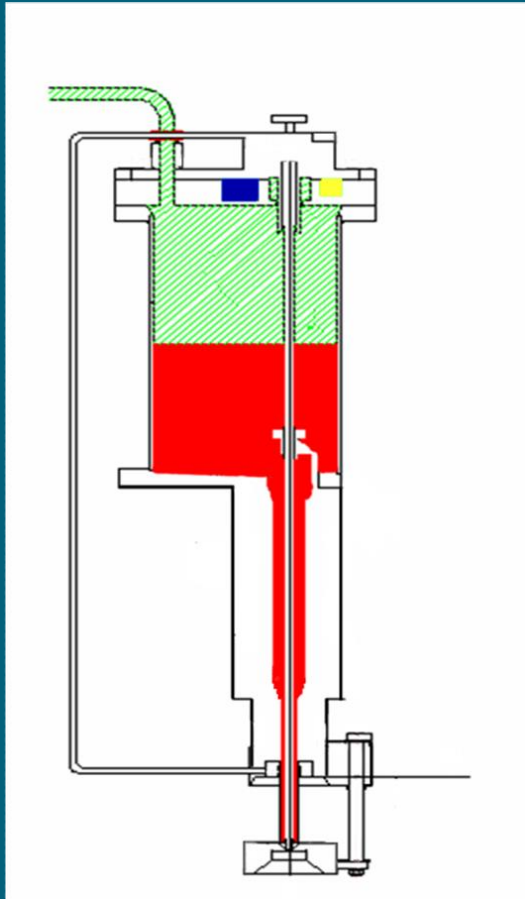
- Product captured from self-leveling
- Re-captured product is sent through a micro-filtration unit
- Recycled product is approximately 1.5-2.0ml per bottle



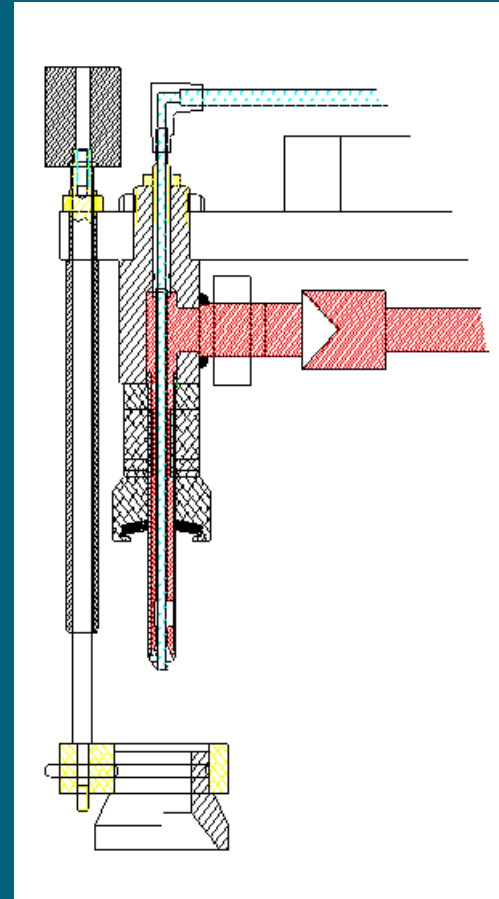
BASIC FILLING PATHWAY



FILLING VALVE COMPARISON



Competitor Valve



TARVISA Valve

TARVISIA DIFFERENCE

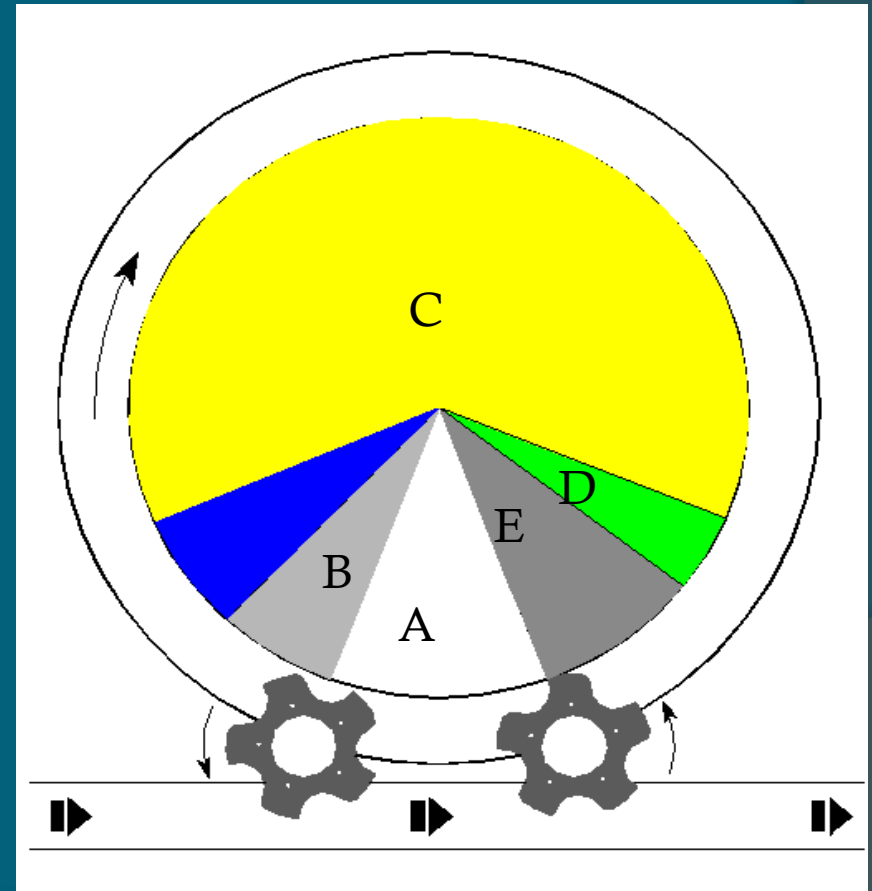
- ⦿ The valve is easier to clean
- ⦿ Less areas for potential contamination
- ⦿ Notice the absence of the tank
- ⦿ No dynamic movement internally

FILLING PHASES OF TARVISIA FILLER



FILLING PHASES

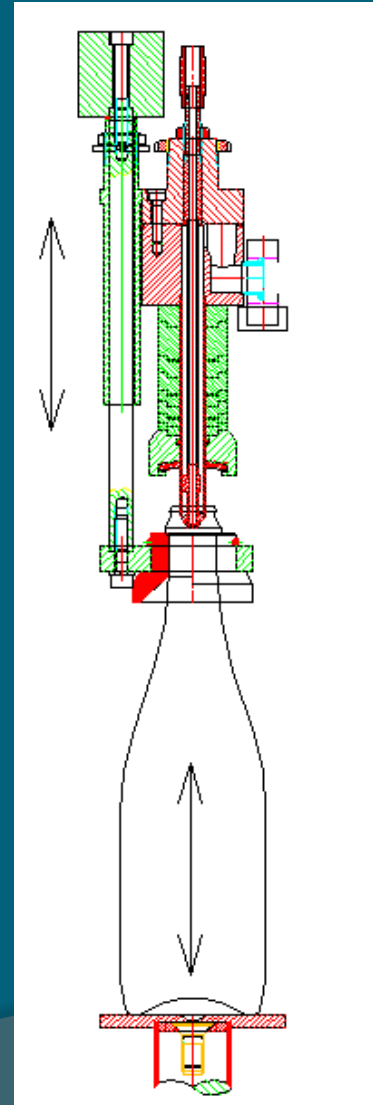
- A) Positioning
- B) Pre - evacuation
- C) Filling
- D) Self - levelling
- E) Descent



FILLING PHASES

Positioning

The bottle pressure from the **pneumatic cylinder** is lifted and centered by the bell that falls simultaneously with a synchronous movement ensuring perfect alignment.

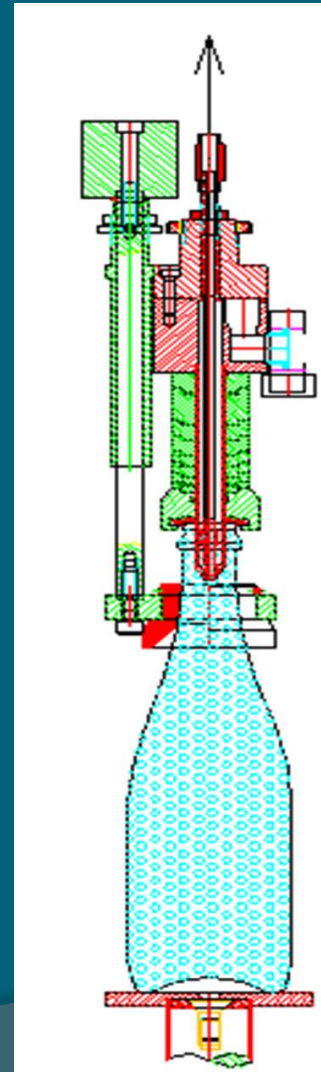


FILLING PHASES

B) Pre-evacuation

With the sealing of the bottle is completed by the low vacuum within the specific circuit the air in the bottle is evacuated from the bottle.

The degree of vacuum reached is about 90% of the volume of the bottle. There is the possibility to adjust the vacuum to reach desired specifications.

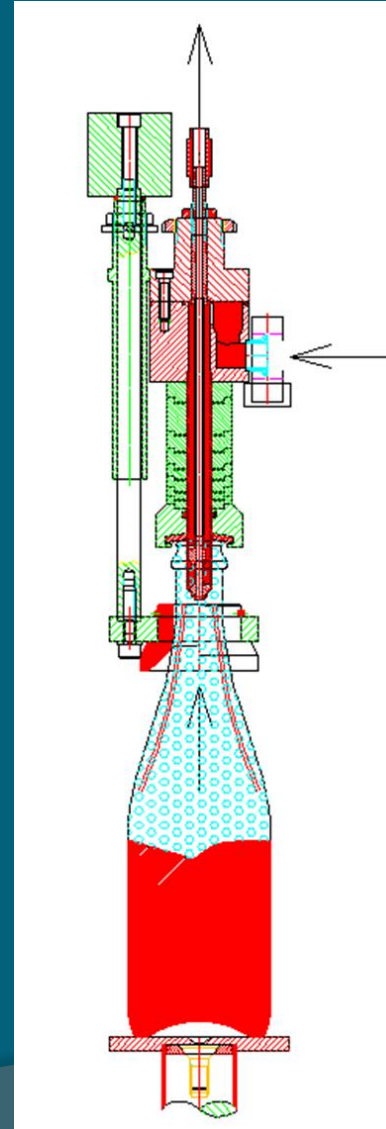


FILLING PHASES

C) Filling

As the vacuum in the bottle starts this allows for the product to enter the bottle along the sides of the bottle creating a gentle non-turbulent flow.

The air from the bottle is removed via the central tube and does not come in contact with the product

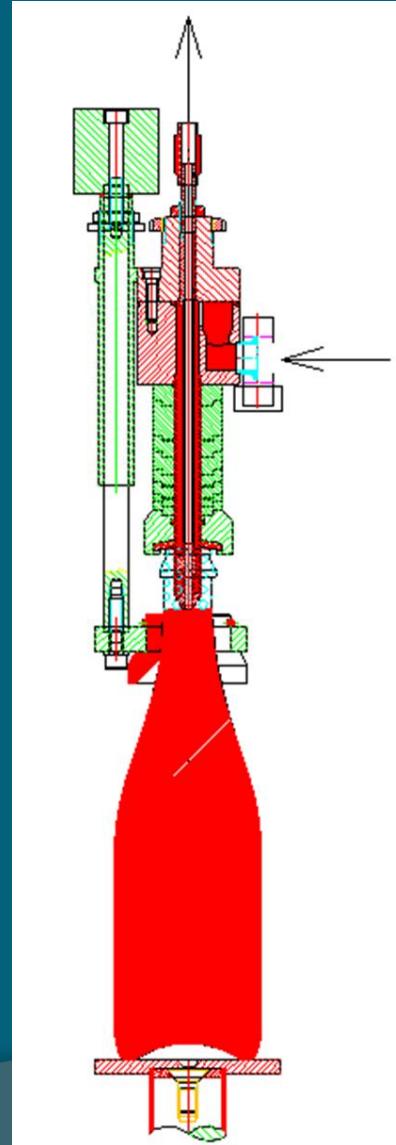


FILLING PHASES

D) Self - leveling

As soon as the product reaches the end of the air return tube the filling phase is completed.

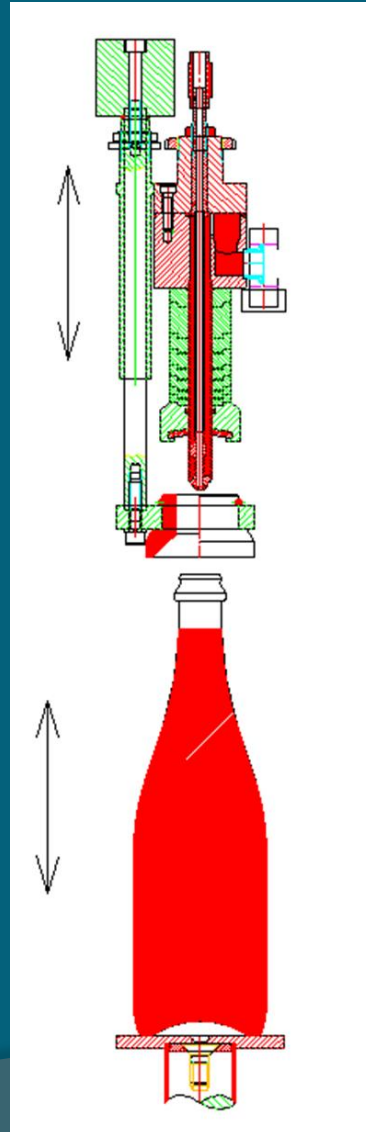
The liquid is automatically removed from the air return tube guaranteeing leveling.



FILLING PHASES

E) Descent

The pneumatic cylinder is lowered bottles are released to the worm-gear drive through the starwheel and sent to the closure phase where inert gas can be applied before corking in the case of wine

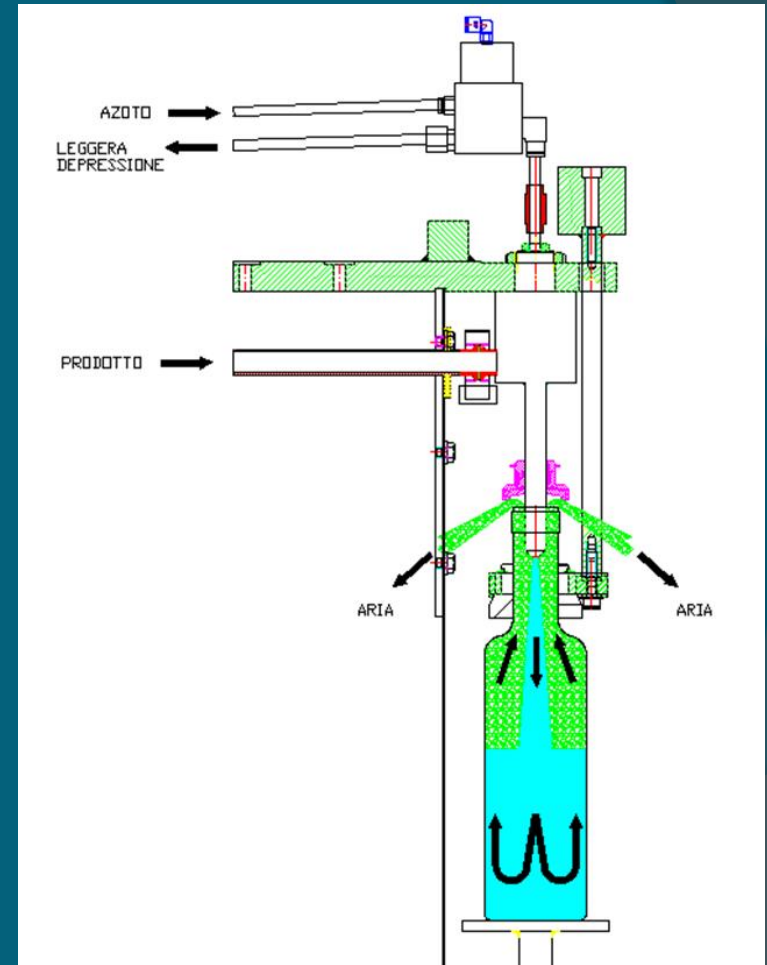


OPTIONAL COMPONENTS

Despite the guarantee of oxygen absorption during the filling phase is close to 0.2 ppm it is possible to integrate the machine with an option which provides an inert gas injection before the closure is applied.

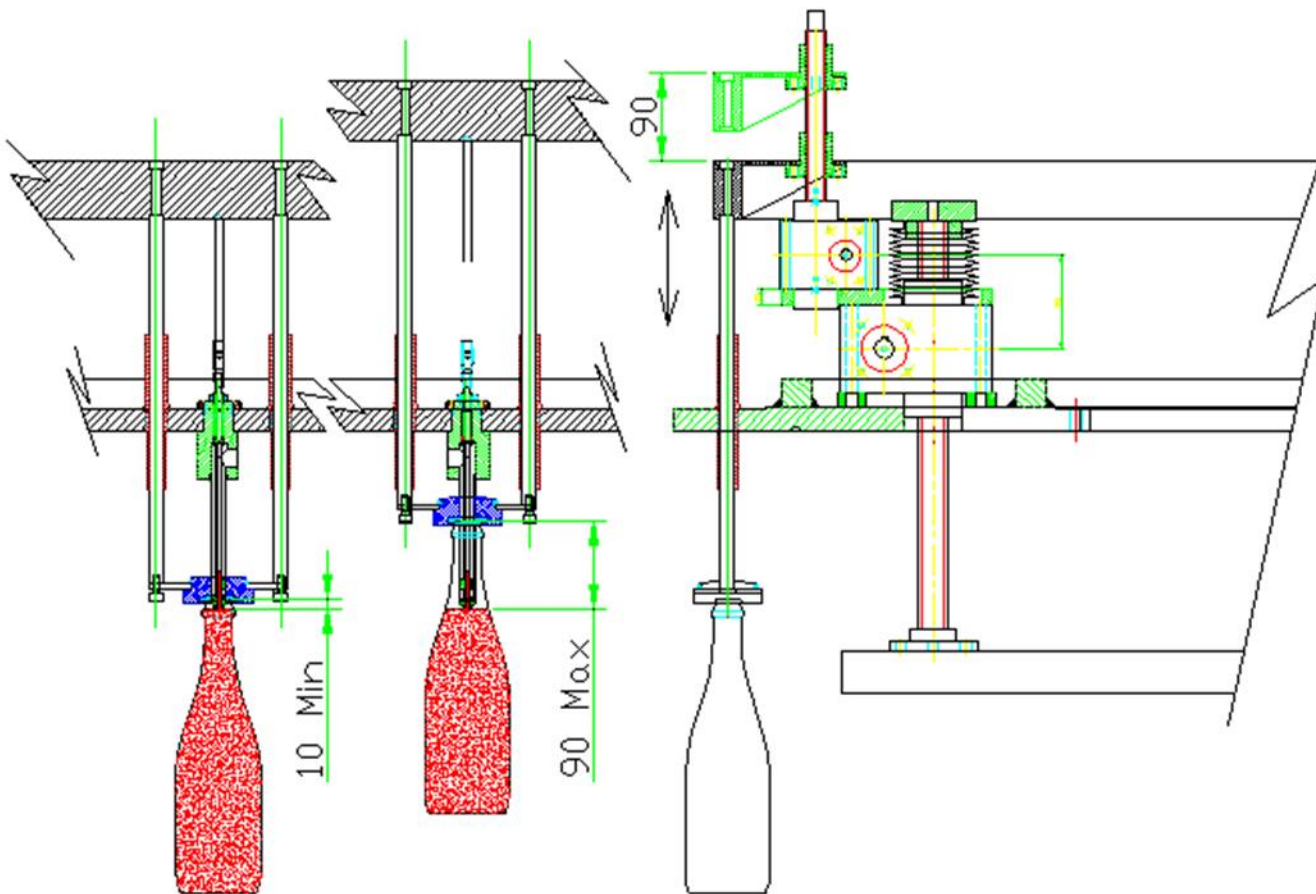
As the bottle leaves the filler valve and enters the closure unit a blanket of inert gas (usually nitrogen, N₂) is applied into the neck of the bottle, further reducing the oxygen content of the product.

This function can be handled by the operator panel and adjusted accordingly for both time and injection pressure.



LIQUID LEVELING IN BOTTLE

From 10 mm to 90 mm with minimum adjustment 0,2 mm



VARI-STAR STARWHEELS

The VARI-STAR has changed the way of handling traditional bottle format changes.

With simply adjustments, without tools , the operator can change format bottle in 5 MINUTES

System for all the bottles of diameter from 50 to 100 mm for cylindrical format.

Reduced time for changing & preparing additional equipment

No need to store additional change over format equipment

Opportunity to work with new formats without having to buy new equipment

VARI-STAR STARWHEELS



PRODUCT GUARANTEES

With the TARVISIA filling system it is guaranteed that the loss of alcohol from spirits products will not exceed 0.05g/L. This makes TARVISIA the ideal filling solution for premium spirits such as whiskey, scotch and cognac

For wines the absorption of oxygen during the filling is guaranteed to not exceed 0.2 ppm, while preserving the delicate aroma and desired flavor compounds.



The Winery TIEFENBRUNNER
has installed **Tarvisia 16 HLV**

Output = 3.000

Bottle= 0,75 lt.

Product = Wine

Analysis made by the Customer at the “Agrarian Institute of St. Michael of the Adige “(Trento)

Analysis before the filling:

Free sulphur = 56 mg/lt., Overall sulphur = 144 mg/lt

Analysis after the filling:

Free sulphur = 56 mg/lt., Overall sulphur = 142 mg/lt

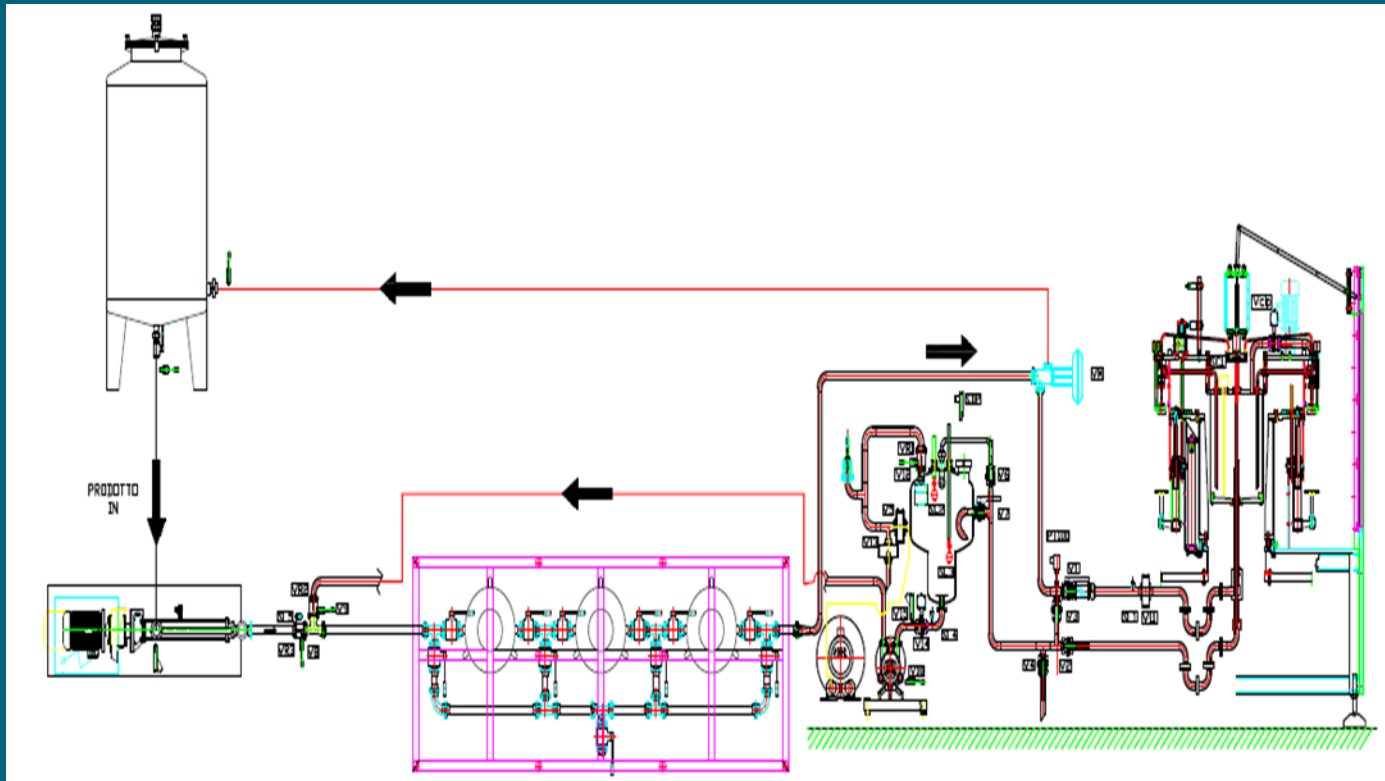
Max increase of O₂ due to the filling : 0,1 – 0,2 ppm

After a hot water and steam washing cycle (20 minutes) the results are as follows:

Acetic bacteria = 0; Lactic Bacteria = 0; Overall ferments = 0; Mildew = 0

WASHING CYCLE

The use of the external reservoir for excess product with pump is also used as a CIP station.

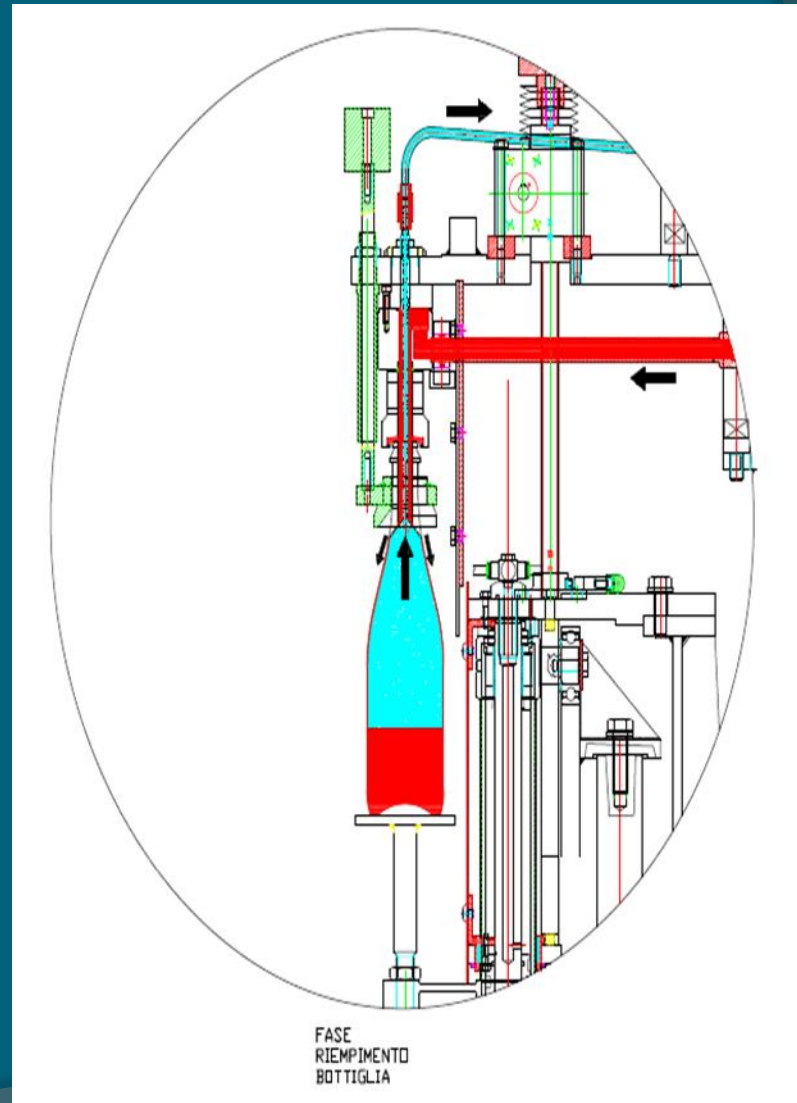


WASHING CYCLE

The valves is completely sterile, both for the liquid circuit and for the air removal circuit without the use of dummy bottles.

The absence of gaskets allows to drastically reduce the CIP time and use of water & chemicals of water.

The external area of the valve washed with a series of external spray stations, allowing for the valve to be completely washed.



EXAMPLE WASH CYCLE

➤ Total capacity reservoir of recycled product	Lt 59
➤ Capacity of work level reservoir of recycled product	Lt 6
➤ Total capacity of expansion tank	Lt 42
➤ Capacity of work level of expansion tank	Lt 38
➤ Total capacity filler circuit	Lt 42

➤ Caustic washing cycle	Lt 400 ca.
-------------------------	------------

➤ Timing	30 min
----------	--------

➤ Water used during the rinse phase	Lt 200 ca.
-------------------------------------	------------

➤ Timing	5 min
----------	-------

➤ Hot or warm water for the second washing phase	Lt 200 ca.
--	------------

➤ Timing	15 min
----------	--------

➤ Produced residual after the final phase	Lt 6
---	------

➤ Product recycled with every activation of the pump	Lt 0.75 ca.
--	-------------

TARVISIA ADVANTAGES

- ✓ Flexibility with any type of product
 - ✓ Easily product change over 20 minutes (colored to white)
 - ✓ Low cost of production (no gas for 0.2ppm oxygen)
 - ✓ Low cost of gasket of filling valves
 - ✓ Low cost of general maintenance
-
- ✓ Low timing for washing and sterilisation
 - ✓ Low use water for washing
 - ✓ Consequently low cost for dirty water disposal
 - ✓ Less employee labour
 - ✓ Reduced electricity usage
 - ✓ Reduced hot water usage and waste

**TARVISIA FILLER is the machine
to consider for your next filler
solution**



DIPRAN S.r.l ,
Via Raimondo Dalla Costa 653 41122 MODENA (Italia)
Tel. 059 2550611

Spin Clear LLC
North American Agent
California, USA
Tel. +1 209 480 6430
johnpurl@spin-clear.com
www.spin-clear.com