

Nash Vacuum Pumps for Bottle Filling



**Using vacuum helps bottles fill faster.
Using Nash vacuum allows for liquid carryover with no unwanted effects on the pump.**

The container filling sequence consists of:

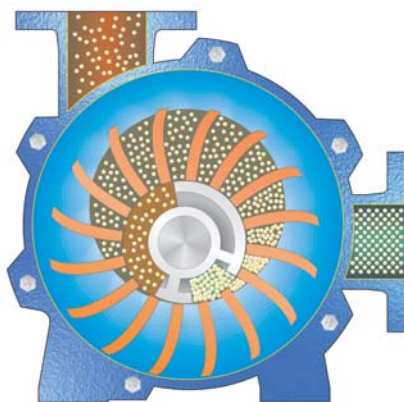
- creating a vacuum in the container
- flushing CO₂ to remove air from the container
- pressurizing the container
- filling the container
- level out
- de-pressurizing the container
- sealing the container

The Nash Advantage

Many companies use rotary vane vacuum pumps in filling applications because of their low initial cost, small footprint, and ability to operate without water. However, due to the regular maintenance required on rotary vane pumps, their lifecycle costs far exceed those of liquid ring vacuum pumps.



Rotary vane pumps require frequent replacement of worn or broken blades, suffer from problems with oil leakage onto the plant floor, and can produce unhealthy oil mist in the air. Nash liquid ring vacuum pumps are oil-free, require little maintenance and are well-known for their reliability. They excel as the vacuum source in filling operations because liquid is an intrinsic part of the pump and any carryover from the filling system is easily handled with no reduction in performance or production.



A Nash Liquid Ring System BUILT TO LAST

Reliable

- continuous operation
- increased operating efficiency
- reduced operating costs

One Moving Part

- reduced downtime in harsh operating conditions or locations
- reduced maintenance costs

Various Materials of Construction

- to satisfy many industrial application requirements

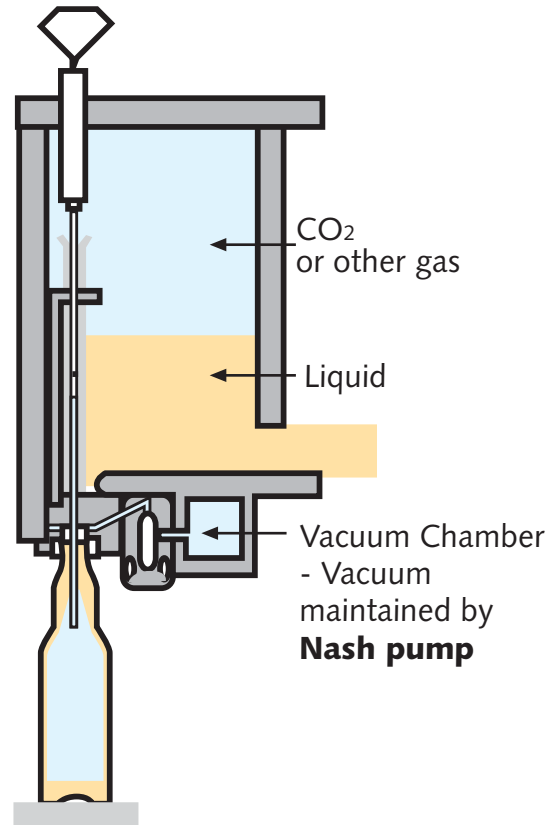
Vacuum Fillers

These fillers draw a vacuum on an overflow container and attach a hose from the filling head and from the head to the product. The vacuum system removes air from the container, which in turn induces the flow of product into the bottle. The product fills to the level of the vacuum vent, and any surplus is drawn into the overflow system. This method is not effective on plastic bottle filling, but is still used for glass bottles and is especially common when filling products like nail polish.

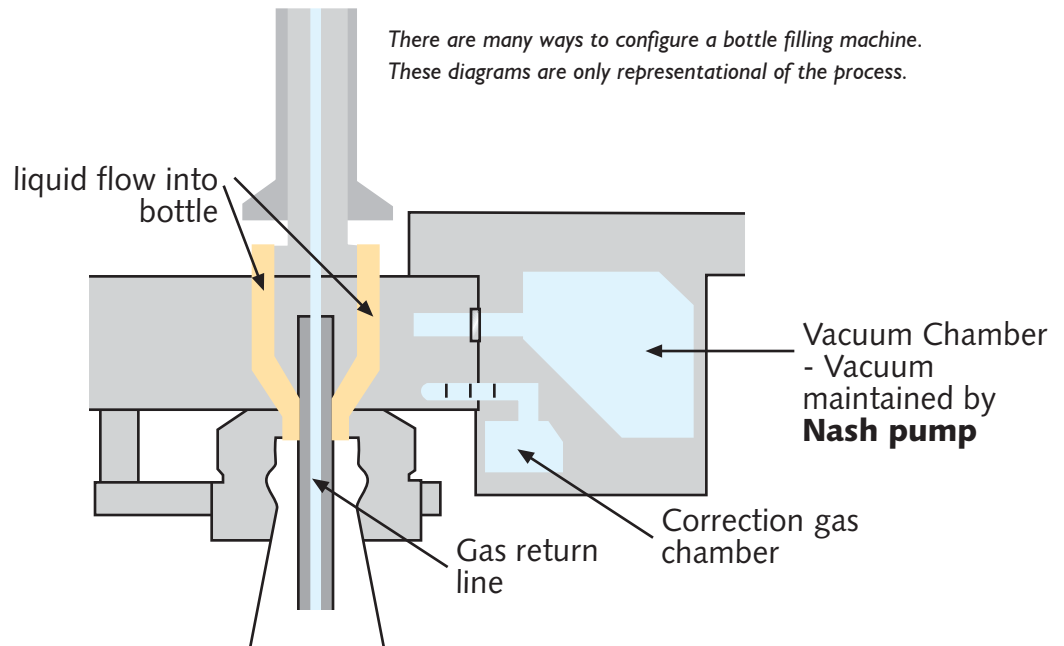
Counter-Pressure Fillers

These fillers are unique to the carbonated beverage industry. There are three parts to the heads of these fillers: vent, CO₂ pressurizer and fill tube. The purpose of the CO₂ is to keep the already existing carbonized beverage in solution and to minimize foaming. The process is:

- the head seals and the vent and CO₂ pressure valves are opened
- air is forced out of the bottle and replaced with the heavier CO₂
- the vent is then stoppered down and the heads force chilled carbonated liquid down the sides of the container in a swirl pattern to minimize foaming
- once the fill height is reached, the vent completely closes at the same time the product is cut off



There are many ways to configure a bottle filling machine. These diagrams are only representational of the process.



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